

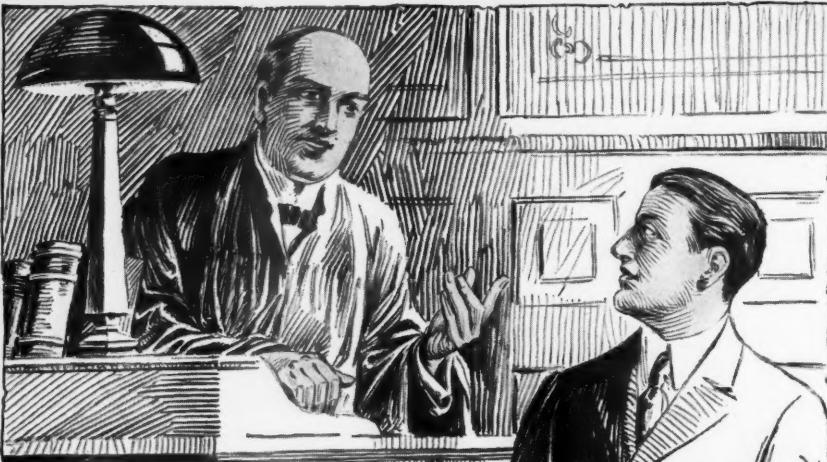
THE DENTAL DIGEST



JANUARY 1918

VOL XXIV, NO. 1

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THE DENTAL DIGEST

Vol. XXIV

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No. 1

ORAL HYGIENE AT LOCUST POINT

THE OPEN-AIR CLASS (CONTINUED)

By CHARLOTTE FITZHUGH MORRIS, BALTIMORE, MD.

FOURTH PAPER

The organization of the open-air class at the Locust Point public school is very simple. The children, twenty-five in number, are divided into four grades. In spite of their ill-health and the time given to sleeping, the children more than keep up with their little companions. Every morning the Social Health Worker, who is a regular trained nurse, spends half an hour with the children, their temperatures are taken and any variation in their condition noted. She talks to the children on matters of general hygiene, and they in turn, are so wide awake and anxious to express themselves on this subject that their arms fly up simultaneously, like a soldier drill, when questions are asked. Not long ago the Social Health Worker asked the children to write compositions on teeth for class work and without any promptings or assistance on her part or on that of the teacher. Papers of this excellent grade were handed in:

“May Hagner.

Jan. 19, 1917.

TEETH

“We clean our teeth so we will have good health, and to make our teeth look pretty, and to prevent decay. We should clean our teeth in the morning and after lunch and before we go to bed.

“We have two sets of teeth the first ones come when we are babies six or eight months old. We generally keep them until we are six or seven years old. Then they come out and our second teeth come in. They all don’t come out at once, if they did we could not chew our food, and we would have indigestion.

“We should take good care of our first teeth as to give room for our

second teeth. We have twenty first teeth and thirty-two second teeth. We get our second teeth from seven to twelve years.

"If we have a cavity we should go to the dentist and have it filled. When we go to the dentist he takes a little instrument and scrapes out the decay and makes it clean and then he fills it with silver or cement. Sometimes if the nerve is exposed the dentist has to put in treatment; this treatment is called arsenic.

"A tooth is a bone covered with enamel. Inside the tooth there is little blood-vessels and a nerve."

At the morning recess, 10.30 A.M., the children are all served with hot milk or cocoa, then classes are resumed. It is very entertaining to watch the children skip to and from the blackboards. They are very orderly and polite, but they seem to feel extremely gay and energetic and even a lame boy arrives at the board almost simultaneously with the teacher's orders. At noon, a warm lunch, prepared by the cooking-school class, is served to the children, who come indoors for this meal. They are allowed *2nd* and *3rd* servings and there is much gaiety and endless conversation at this social hour. Before eating they all stand with their little heads bowed and sing softly:—

"Father of all in Heaven above,
We thank thee for thy love,
Our food, our homes and all we wear
Tell of Thy loving care."

—then they fall upon their food in a hearty enthusiastic manner delightful to see. Here and elsewhere they are polite not only to "teacher" but to each other. After lunch the children lie down out doors, well wrapped up, on army cots, when they sleep so soundly that Miss Carr has had to pick them up off the ground where they have rolled without awakening. When the class was first opened one little boy thought this was a fine game, and played bear under his Indian rug, growling and pawing at his cot till the combined efforts of the principal and the teacher quieted him. They are never disturbed but when they awake naturally, they return to their classes.

To discuss the history and the organization of the open-air class is an easy matter; the difficulty lies in trying to give a just and vivid idea of results. To enumerate results seems to limit them, and the results of the establishment of the open-air class are for the most part too boundless for definition. The teacher of the open-air class says that most people consider only the physical and mental improvement in their children. In a neighborhood like Locust Point there is particularly wide scope for moral improvement, and among any group of children will be

found one or more who are irritable, "cross" and wayward. Of course the teacher's idea that fresh air has been such a character modifying agent with her children, must be taken with a grain of salt, that is, her own influence on the children must be taken into account. The fresh air, however, is undoubtedly soothing and helps to give the bad child the control which he lacks. But surely the teacher, a typical person of the wide out-of-doors herself has been an influence in inspiring generous and gentle impulses in the children. One who was sent away from a hospital for bad behavior is now as gentle and as lamb-like as any twelve year old can be; one who talked incessantly and indiscreetly is now learning to wrap herself with her Indian blanket, in a gentle reserve of speech, while many irritable children, since their removal from the vitiated indoor air have become as sweet in spirit as only a child can be.

But the truest effect of the fresh air on the character of the children can only be gained by visiting the class. They are all so eager to respond; they all do the very best they can instead of working within only a small radius of their powers as many of us, most of us, do. They combine with the *effort* which a thinking being puts forth, the *repose* of the sun-loving creatures of nature. The teacher herself has learned the lesson which nature according to Matthew Arnold teaches, "Of Toil unsevered from Tranquility," and the class reflects her unconsciously. In her class, one could be sure that a child would do his best to get a problem, but one could scarcely imagine him bursting into tears if he found his solution impossible.

Of course the moral change has a physical basis. With the training in physical matters which the children receive in school from the Social Health Worker and practice in their homes, many of them can help cure themselves. One little chap told his teacher that when his mother, thinking him asleep, closed his window, he always got up quietly and raised it again; another that now that the kitchen seemed so hot and stuffy, she wrapped up and sat out in the back yard to get the air. Many of them do not struggle alone in this pathetic contention against the prejudices of their parents, but they have given their mothers, in their improved health, the best proof possible of the efficacy of fresh air, bathing, and milk and oatmeal, instead of kitchen air, dirt, coffee and buns.

The arrested cases of tuberculosis are common to all open-air classes run upon the right lines. The sane heart and mind cannot consider a child with this handicap dispassionately. If he is not given his full chance, one feels a millstone about his own neck, and he deserves to feel it if his indifference to other children besides his own little "Round and Rosy" ones has never made him think ahead toward open-air

classes in every school. Delicate and anaemic children are the first prey of disease, and not only the heart of man, but his head which, providing he uses it, can perceive the greater burden to the state of adult invalidism, should prompt him to subscribe some part of his energies to so practical and expedient a one as open-air classes for delicate children.

That little group of twenty-five children at the Locust Point Public School, snuggled up warmly in their blankets, their cheeks and little snubby noses pink, their eyes clear and bright are indeed under a menacing cloud of ill-health or they would be inside the building with their more robust companions. But if this cloud of ill-health is finally to be dispersed, it will have been first scattered by the sunlight of the out-of-door class; and the noon of life for these children whose morning has been darkened will be, through the efforts their school put forth, bright and splendid and productive.

(To be continued)

CARE AND TREATMENT OF CHILDREN'S TEETH

BY WALTER R. HUGHES, D.D.S., OAKLAND, CALIF.

"Every art has its own methods of training, its distinctive discipline, its secrets of experience and skill; and mastery depends upon practice of these methods, submission to this discipline, possession of the fruits of this experience, and command of this skill. Between the untrained and the artist, in every department of creative work, there must be an educational process severe and prolonged. This necessity is imposed upon men of genius no less rigorously than upon men of talent."—HAMILTON WRIGHT MABIE.

The care and treatment of the teeth of children require the greatest patience an operator can muster, often demanding even a greater amount of skill than is exhibited in the ordinary dental operations, i. e., if the operator expects any degree of permanency in his work. The nature of the little patient militates against the best results of the dentist's ability, and he makes an operation through necessity rather than through choice. In a majority of cases lack of self-control on the part of the child makes it impossible to operate with accuracy. It is the dentist's aim to restore the lost part in such a manner as to make a water-tight covering over the dentine. The greater spring or elasticity, found in the peridental membrane surrounding the root of a child's tooth, together with the time required to make such an operation, render long and heavy malleting for condensation of gold fillings almost impossible. On

the other hand, work of a temporary nature is of inestimable value to the little patient as the points of contact can be temporarily restored and decay temporarily abated. Valuable lessons of a prophylactic nature may be taught and at the same time, a desire to have the fillings made of permanent nature established.

It is better judgment to make short appointments and operate from twenty to forty minutes rather than to detain the little one until the nervous system is exhausted, and the confidence and courage of the child destroyed by long, tedious operations. During the little patient's first few visits to the dental office, the operator should do some of the temporary work necessary, and at the same time he should try to gain the confidence of the little fellow and never allow him to be deceived either by parent, assistant, or himself. Tell him that it will hurt a little, but that you expect him to be a little man and help along by his bravery.

The management of the child must be accomplished in a manner to create and hold his interest and not be too much of a strain upon him. There are certain operations that necessity demands be done without reference to the patient's dislikes, if he is to enjoy the most satisfactory results in his later life. Occasionally a tooth must be extracted to afford relief from pain. Not infrequently a filling which approaches near the pulp, must be made to preserve the usefulness of the tooth, as well as that region of the jaw.

Mrs. Stoner claims that the child is capable of learning best at the receptive age or between the ages of two and six years. Thus we find habits that are formed through their own spontaneity become a pleasure and not a burden to them. So, early in the life of the little one, he must be taught habits of cleanliness. Keeping the mouth and teeth clean, then, should be one of these habits. Likewise the tooth brush drill has its place in the social fabric of the community, notwithstanding the fact that so much has been said against that aid to cleanliness. We would no more think of going on duty without our faces and hands clean than with our shoes unbuttoned. So we should have no more reason to expect to see boys and girls with their teeth not clean than to meet the President of the United States in overalls, because both would seem out of the ordinary. A clean mouth and well kept tooth should go hand in hand with personal cleanly habits.

Instruct the little patients to brush their teeth not only across the occlusal and incisal surfaces, but also to brush them from the gum tissue toward the cutting edges of the teeth. Brush the teeth lengthwise. Hold the brush firmly in the hand and, with a rolling motion, sweep the brush from the gum tissue over the teeth. By so doing the bristles of the brush will penetrate into the interproximal spaces. This will materially

assist in the removal of food particles which may have found lodgment between the teeth. This acts as a massage treatment. It also affords a stimulating action to the tissue. Brushing this delicate septum of gum toward the tooth will tend to preserve the natural health of the part. By observing this precaution the delicate column of tissue standing between the teeth, as if it were guarding the interproximal spaces, is not injured or bruised by the brush, but stimulated in strength and vigor. After thoroughly brushing the teeth, the mouth should be rinsed with warm water with sufficient pressure caused by the tongue and cheeks to dislodge any remaining bits of food that tend to stick or adhere to the teeth. Each little tot should have his own toothbrush, and a place to keep it, too. This will help to stimulate a desire to use it and keep up an interest in the toothbrush until he would not be without it. The children must use a brush of some nature or this great cause of Oral Hygiene will be defeated. We cannot cope with the caries of the teeth alone.

CLEFT PALATE

The cleft palate may engage your attention. The cleft palate is best operated when the patient is but a few days old. The condition of the tissue offers better results in infant life rather than later. Drs. Brophy, Carlton, and others prefer to operate as soon after birth as they can get the patient. However, an operation upon the palate in adult life is attended with marked success, in most cases rendering a complete recovery to the unfortunate patient.

ORTHODONTIA

A patient with very crooked teeth may next present himself for your advice. It matters not whether they are the most crooked teeth on top of the earth or a case of orthodontia where the teeth need only a slight regulation, the case is best referred to the Orthodontist. He alone is the better judge about when to operate.

All forms of malocclusion should be reduced to a normal condition during the patient's early life. This will assist in preventing pyorrhea in his later life. About fifty per cent. of the people over forty years of age have pyorrhea in some form; and about ninety per cent. of the cases are caused by malocclusion and a lack of, or faulty, contact. Malocclusion and loss of contact are the great factors which tend to produce malnutrition. Most of the ailments of the body are due to malnutrition. Thus, as a great factor which will tend to contribute to good health in his childhood, and as a factor which will tend to maintain the best

conditions of health in his later life, it is, therefore, an obligation due the little patient to have these corrections made in his early life. The maladies of the human family will be lessened in proportion as this work is done.

It would be wise to have the patient confer with the Orthodontist early in the little one's life so that the former might advise him of the best time to operate and of the dangers that attend by waiting too long. The correction of malocclusion is also undertaken early in life. The best time to begin treatment for the prevention of irregularity of the permanent teeth is from four to six years of age, preferably the earlier period, depending upon the development of the child and severity of the case. When jaws are not in their normal relative position treatment should begin in a gentle manner as early as the patient can be handled.

A great deal of stress should be placed upon early and close observations of the deciduous dentures, seeing that caries does not advance to the extent that it involves the pulps and large portions of tooth structure. In so doing many irregularities of the permanent teeth are prevented. Any discomfort to the child while using his teeth, whether it be the impaction of food or pain and soreness due to some other cause, results in the arrested vertical development, through the disuse of the jaws. This is one of the greatest causes of irregularities of the permanent teeth. This is found classified in Angle's Class 1, of cases.

Again the permanent teeth erupt in the direction of least resistance. Thus abscessed deciduous teeth frequently cause a changed condition of the bony wall surrounding them, resulting in the permanent teeth erupting out of their proper arch alignment.

ABSORPTION OF ROOT ENDS

The importance of retaining a deciduous tooth in place until a successor shows a willingness to appear cannot be overestimated. The temporary or deciduous teeth form a crypt for the permanent teeth to rest in. One cause of malocclusion or lack of development of the arch is the premature loss of the deciduous teeth. Yet, on the other hand, should a deciduous tooth be retained after the permanent tooth has started to erupt, it may form a natural barrier to the normal eruption of its permanent successor and deflect it from its normal course. As the retention of the deciduous teeth is a great aid to the development of the jaw and good health, it should be imperative then, to retain the temporary teeth until nature absorbs the roots, and the teeth come away normally. With the exception of a few teeth extracted because of abscess conditions, better judgment would advise against the wholesale loss that we see

sometimes. If we will reflect a moment we will find, as Broomell truly tells us, that the "deciduous are temporary teeth in their nature and, after subserving the purpose of early childhood, are thrown off by an operation of the economy to give place to the permanent organs. In a year or two after the roots are completely formed and the apical foramen established, absorption begins at the apical end and continues in the direction of the crown until absorption of the entire root has taken place and the crown is lost from lack of support."

TREATMENTS

It is this process of absorption of which mention has just been made that renders the treatment of the deciduous teeth so uncertain in results. It is this condition also which renders the application of arsenic impossible at certain ages. The application of arsenic for the removal of a pulp may be made before the process of absorption has taken place with some degree of certainty as to good results. The roots of teeth which do not require treatment of any nature generally absorb and come away normally. On the other hand, if an abscess condition prevails about the apical end of a root, absorption is greatly interfered with. Generally the tooth must be extracted with the forceps in order to clear up the abscess area which will not yield to medication.

When is it necessary to remove the pulp of a deciduous tooth, provided the age for absorption of the root ends has not advanced too far, arsenic may be applied upon a piece of paper cut to fit over the pulp. The dressing is carefully placed and sealed in the cavity with cement, gutta percha, or cotton saturated with chloropercha. The gutta-percha is used only in those cavities where the biting stress will not be sufficient to cause pressure upon the pulp or dislodgment of the sealing. The patient in this case would either force the arsenic through the canals into the tissues, or would force the treatment out of the cavity, resulting in arsenic poisoning in either case. When a gutta-percha filling is placed, it is a safeguard to paint the walls of the cavity with chloropercha or oil of eucalyptus. When using chloropercha a small pledget of cotton saturated with it is left in the cavity and the filling placed over it. After the pulp has been removed a dressing of oil of cloves, phenol compound or Black's 1-2-3 mixture, or creosote is placed in the pulp chamber and canals. The writer prefers creosote in all cases where the pulp has recently been removed.

Among the different medicaments advocated to assist in destroying pulp life of the deciduous teeth are Borwin's obtundine arsenic in its different preparations, phenol, creosote, iodine, aristol in combination

with chloropercha, Kellogg's devitalizing paste, while other operators advocate the use of pressure anesthesia for pulp removal, and yet some obtain equal success with novocain injected into the tissues.

Some operators give adverse reports concerning the use of arsenic in any form in the treatment of the deciduous teeth. There are a few reports of permanent disfigurement to the tissues about the mouth in the use of arsenic for pulp devitalization in temporary teeth. There is no doubt that operators who occasioned such tissue destruction did not observe the rule for root absorption or were careless in its application.

It has been found upon inquiry and discussion of methods employed in the care and treatment of children's teeth that a pledge of cotton saturated with chloropercha makes a splendid temporary filling to seal in a medicament for a day or even weeks. In fact it has been known to stay intact for many months. Many report it satisfactory for sealing in treatments for little folks as well as being very advantageous in the treatment of teeth for adult patients.

(To be continued)

Editor DENTAL DIGEST:

On invitation of the dentists of Storm Lake, Iowa, most of the dentists of Buena Vista County, Iowa, held their first meeting on Oct. 31st at that place and organized a county association.

The object of this meeting was to discuss free dental service for the soldier boys to which all agreed, including the ones who were not in attendance.

Through the courtesy of the boys at Storm Lake they were treated to a banquet at Hotel Bradford which was very much enjoyed by those present.

The officers elected are as follows:—President Dr. C. F. Sangston of Alta, Iowa. Vice-President Dr. F. W. Heiny of Marathon, Iowa. Secretary Dr. V. E. Herbert, of Storm Lake, Iowa. Treasurer Dr. G. H. Clemons of Storm Lake, Iowa. Press Agent Dr. F. E. Anderson of Sioux Rapids, Iowa.



A TRUEBITE TELEFORM GAUGE

WILLIAM CURTIS DALBEY, D.D.S., DU QUOIN, ILL.

Notwithstanding the painstaking explanations setting forth the primary types of faces with their several modifications, which call for their respective shapes of teeth, the writer has found himself somewhat like the man in Holy Writ, who, beholding himself in a mirror and turning away, "forgets what manner of man he is."

But to the subject of the modifications of the three typal forms of human faces. The three typal forms are easy to deal with, but when modifications present themselves for immediate consideration, especially those of the tapering types and oval faces, you get out your book, "Restoring Expressions with Artificial Teeth" with a professional and semi-businesslike flourish. The patient seems interested, and about the first question is: "Doctor, what shape of teeth does my face call for?" Ah! you have them (or they "have you"). You turn first one page and then another, then back again, then forward. You color up, then sweatbeads present themselves upon your intellectual highbrow. You look first at your patient, then knowingly at the pictures, the patient sees your embarrassment. You finally must say "this one"—or, "no, let me see, this one comes nearer." Ach, this gets on your nerves!

Right here the writer wishes to say, that in the fifteen years he has made a specialty of artificial dentures, in which time he has invented twelve anatomical articulators before his perfected one, and given the subject of prosthetic articulation much deep study, and has lectured much upon the subject, nothing else has brought to him so much satisfaction and real joy as the articles upon this subject in past issues of the DENTAL DIGEST.

In the writer's experience he found that many did not know the positions from whence the lines of the face were taken. Some thought the lines extended from the position of the condyle to the point of the chin. The writer's best results have been obtained in observing the general outlines that are brought within the limits of the gauge herewith illustrated, see Fig. 1. He has for want of anything better designated it Dalbey's Truebite Teleform Gauge; as the name implies, it is to tell the form of tooth best suited for that patient in hand. This, he believes, has largely eliminated doubt and much embarrassment before the patient. For when pressed with the question, "What shape teeth does my face call for?" he instantly places the Gauge, and the "shape" is at once determined. This has not only an optical effect upon the patient but is a real benefit to the dentist.



Figure 1

Referring to the subject of position in measurement, the writer believes he obtains best results from not taking the line from the position of the condyle to the angle of the jaw, but from a position anterior to the condyle upon the posterior end of the zygoma. This is above and anterior to the condyles and is the widest part of the human face usually. This is true in the first two types, and would be so in the ovoid type if the fleshy roundness below the zygoma was not considered.

In taking the measure or observation from this position, the writer does not think anything is lost but a real gain. Right here the writer contends that the fleshy condition in outline must be taken into consideration in these observations; notwithstanding the embarrassment he was

once placed in, when making a set of dentures for a square type face, it was noticed that the subject after returning from a prolonged vacation had apparently changed into a typical ovoid, the vacation experience had been so markedly beneficial. From the point on the zygoma or widest part of the face in the first two types, the line should not extend directly downward to the angle of the jaw but forward and downward for optical reasons to a point nearly half way between the jaw line. This would bring some of the so called square types into the tapering zone, and some of the ovoid types apparently into the square zone.

DALBEY'S TRUEBITE TELEFORM GAUGE

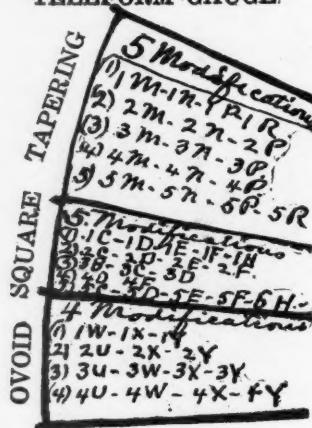


Figure 2

When looking a subject squarely in the face the true posterior angles of the jaw, being so far back blend away and the lines nearer you become more pronounced.

That is why, for optical reasons, the writer seems to obtain better results by not sticking to the hard pronounced angles of the jaw, for a line of calculation. This line, as he sees it, extending from above downward and forward will be at an angle of about 70° . Principally, the fleshy outlines of the face, and not the bones of the subject should receive the greater consideration in determining face form. Photos and flat cuts do not show this phase very well.

The fallacy of taking the bone lines only, as some do in their calculations in selecting teeth, is graphically illustrated in the book, "Trubyte Teeth for Vulcanite Plates."

The author's idea as to where this 70° line should come is illustrated

by Fig. 3. This is the blending line of the subject or the general line that is first presented to the eye of the dentist.

The gauge herewith illustrated presents several desirable features.



Fig. 3

First, the indication card above the gauge (See Fig. 2) not only tells within which type the patient comes, by the pointer, but second, the styles or moulds of the teeth are presented before the dentist without having to refer to the book. The length of the face and, therefore, the length of the teeth, is determined by referring to the scaling upon the sides of the gauge.

Upon the gauge at the position of the point of placing upon the zygoma, is a brass point which marks the beginning of the scaling upon the sides of the gauge. This scaling is extended five and one half inches toward the ends of the side strips of the gauge. Between the markings 2 and 3 is seen the word "Short," and between the figures 3 and 4 is the word "medium," and between 4 and 5 is the word "long." Thus the length of tooth is determined by the distance from the zygoma position to the point of the chin; the chin coming within the region of either short, medium, or long. Of course, it is understood that we are not to get away altogether from the length of lip idea, but this is secondary, as the length of the zygoma-chin line, for beauty and harmony must have first consideration.



**OPERATING ROOM OF DR. PAUL S. COLEMAN,
WILBURTON, OKLA.**

Dr. Coleman says: "This is what a gallon of white enamel will do for a country dental office." We do not know what the appearance was before the coat of white was applied, but it is a neat office now.

THE FIRST FREE MEDICAL CLINIC DEVOTED SOLELY TO THE CURE OF DEFECTIVE SPEECH AND VOICE CONDITIONS

The story of this clinic ready and waiting for those of our soldiers and sailors who may return with speech defects is interesting to us because dentists will have much to do with oral surgery and with making restoration of speech possible. Perhaps this clinic will take up some of our work where we leave off.—EDITOR.

In view of the fact that there are a great number of people who are troubled from some form of speech or voice disorder and that a great many American soldiers and sailors are likely to return from the front with their powers of speech impaired either as the result of wounds or shell shock, the various branches of medicine bearing on the treatment and cure of speech defects have been coördinated in a new clinic.

The New York Clinic for Speech Defects is located at 143 East 37th Street, New York. It is composed of a number of departments: a Medical Department to take care of the physical condition of the applicants; a Dental Department to take care of teeth, mouth, and jaw conditions when such conditions are the causative factors of defective speech; a Nervous and Mental Department to take care of such conditions when they are causative or associated with defective speech; a Reëducational Department to reëducate patients to overcome their faulty voice or speech habits. A Department for Teaching of Lip Reading to deaf soldiers and sailors, as well as lay people will also be one of the features.

At this clinic, too, practically for the first time in America special provisions will be made to cure foreigners of their accent by treating the accent as a defect of speech. Inasmuch as correct speech in any tongue is unobtainable without thorough knowledge of the fundamental sounds which make up the words of the language, a special department of the clinic will offer foreigners a course of instruction in the fundamental sounds of the English language, so that before learning to express themselves they will have first mastered the basic sounds correctly. By doing so the foreigner will speak English as English should be spoken, and not with a French, Yiddish, or Italian accent.

A number of prominent physicians are greatly interested in this movement and are lending their support for its success. Among these are Dr. Abraham Jacobi, Dr. John E. MacKenty, Dr. Philip D. Kerrison, Dr. George M. Parker, Dr. Herbert L. Wheeler, Dr. I. Seth Hirsch, Dr. Alexander Duane, Dr. James Sonnett Greene and Professor John Dutton Wright. The Hon. Franklin Chase Hoyt, the Presiding Justice of the Children's Court is a member of the Consultant Board.

Since the organization of the New York Clinic for Speech Defects has been prompted by the thousands of neglected cases of defective

THE DENTAL DIGEST

speech found among those who are unable to pay for proper scientific treatment, the treatment is given absolutely free of charge. The work is non-sectarian and offered irrespective of race or color.

The Clinic is open afternoons from 4 to 6 o'clock; Monday, Wednesday, and Friday Evenings from 8 to 10 o'clock. A special feature is the evening classes in order to make it possible for working boys and girls, men and women, who have to earn a livelihood and are unable to pay for treatment, to obtain relief from their affliction.

The Clinic is being financed by private philanthropists. The Clinic is officially licensed under the laws of the State of New York and was recommended for its charter by the State Board of Charities. Dr. James Sonnett Greene who has spent a number of years in the Medical Speech Clinics of Europe has been elected to be the Medical Director of the Clinic. The speech work that is carried out will therefore be the same as that of the Clinics of England, France, and Germany.

The Clinic is now open to the public.

THE DENTIST AND THE LAW*

A BRIEF INTRODUCTION TO DENTAL JURISPRUDENCE

BY WILLIAM NETTER, OF THE NEW YORK BAR

THIRD PAPER AND CONCLUSION

We have seen, therefore, that the state, in its desire to protect the health and safety of the public, imposes the duties of due care, skill and learning upon all medical and dental practitioners, and renders liable both civilly and criminally those who disobey. But so jealous is the law of the physical well-being of those whom it is thus designed to protect, that it has gone even farther in its efforts to safeguard and protect its wards, and has endeavored to lay down certain requirements as the minimum of learning and skill which must be possessed by those into whose care the health of the public is entrusted. These minimum requirements are to be found in the statutes of the various States of the Union, relating to examining, licensing, and registration of physicians and dentists.

The Public Health Law of New York provides that before an applicant is eligible to examination for admission to practise as a dentist, he shall give evidence, verified by oath, that he possesses the following qualifications: 1. That he is at least twenty-one years of age. 2. That he is of good moral character. 3. That he has had a preliminary education equivalent to graduation from a four-year high school course. 4. That subsequent to completion of such preliminary education he

either (a) has been graduated with a dental degree from a registered dental school; or (b) has received the degree of M. D. on graduation from a registered medical school and has studied dentistry thereafter for two years in a registered dental school, receiving therefrom the degree of D. D. S.; or (c) holds a diploma or license conferring upon him the full right to practise dentistry in some other State, which diploma or license must have been granted by some licensing board, college, school, or university registered by the regents as maintaining an educational standard equal to that required of dental colleges of this State; or (d) has lawfully practised dentistry for more than twenty-five years outside of the State and within the United States; of these candidates only a practical examination is required. Applicants twenty years old, on proof of compliance with requirements 1 and 2 above mentioned may, after two years' study in an approved dental school, be admitted conditionally to the examinations in anatomy, physiology, chemistry, metallurgy, and histology. Any member of the Board of Examiners may inquire of the applicant for examination concerning his qualifications, and may take testimony of any one in regard thereto, under oath.¹

It is further provided that no degree in dentistry may be conferred in the State of New York except the degree of D. D. S.; and that such degree may not be conferred except (1) after the satisfactory completion of a three year course in a registered dental school; or (2) after graduation from a registered medical school with the degree of M. D., followed by the satisfactory completion thereafter of a special two year course in dentistry in a registered dental school. In either case, the dental student must before matriculation in the institution conferring this professional education, file with the Board the so-called Regents' Qualifying Certificate, showing that he possesses the requisite preliminary education.²

If the applicant for admission passes the prescribed examination given by the Board of Examiners, the Board of Regents issues a license to him. There is provision made also that the Board of Regents may, in a proper case, issue a license to a licensed dentist who has practised for six years in another state.³

¹N. Y. Public Health Law Sec. 196 (as amended L. 1916 ch. 129). See also Sec. 190 (as amended L. 1916 ch. 129); sec. 191 (as amended L. 1912 ch. 171); Secs. 192-193 as to membership of dentists in the District Dental Societies. The examination fee is \$25 (Sec. 200, as amended L. 1916 ch. 129). This entitles him to two final examinations. (Sec. 196 subd. 4 as amended L. 1916 ch. 129). These statutes have been held constitutional. *People v. Piersan*, 176 N. Y. 201; *State v. Board of Dental Examiners*, 31 Wash. 492; *State v. Chapman*, 69 N. J. L., 464 (affd. without opinion, 70 N. J. L. 339). See *Dental Society v. Jacobs*, 103 App. Div. 86.

²N. Y. Public Health Law, Sec. 197 (as amended L. 1916 ch. 129). This section also provides that after Jan. 1, 1921, a 4 year course of study shall be required.

³N. Y. Public Health Law, Sec. 198 (as amended L. 1916 ch. 129).

After the applicant has received his license he must register in the office of the Clerk of the County in which his office is to be located, his name, age, office and post office address, date and number of his license, and the date of such registration; in order to register he must show the County Clerk his license or a duly authenticated copy thereof, and must make an affidavit "stating his name, age, birthplace, the number of his license and the date of its issue; that he is the identical person named in the license; that before receiving same he complied with all the preliminary requirements" of the law, and with the rules of the regents and of the board as to the terms and amount of study and examination; "that no money, other than the fees prescribed by this Article and said rules, was paid directly or indirectly for such license, and that no fraud, misrepresentation or mistake in a material regard was employed or occurred in order that such license should be conferred."

The County Clerk must forward a copy of the certificate of registration, and of the affidavits on which same was issued to the secretary of the board. On or before May 1st of each year, the secretary of the board shall mail to every registered dentist a blank application for re-registration. This must be filled out and sworn to before a notary public, after which same must be forwarded to the secretary of the board together with the fee of \$2. Thereupon the secretary of the board shall issue a certificate of registration, which shall render the holder thereof a legal practitioner of dentistry for the ensuing year. These certificates of registration shall all bear date of September 1st of the year of issue and shall expire on the 31st day of August in the year following. Applications for renewal of registration therefore must be made on or before the 1st day of September of each year, and if not so made an additional fee of \$1 for each 30 days of delay beyond the 1st day of September and up to the 1st day of January shall be added to the regular fee. On January 1st of each year, or within 10 days thereafter, the secretary shall mail to every registered dentist a printed copy of the dental law and a printed list of the legally registered dentists. Registered dentists are requested to report to the secretary of the board any dentists known to be practising dentistry, whose names do not appear in the list; the name of the dentist who gives this information will not be divulged. Failure to register on time is ground for suspension or revocation of license.

All practitioners of dentistry already registered in this state at the time of the passage of this act, must make application to the secretary of the board for the re-registration blank, upon receipt of which he must make application for re-registration, and send blank properly filled

in to the secretary of the board, together with \$2 fee. Failure to do so by December 31, is ground for revocation of license.¹

A practising dentist may have his license revoked for unprofessional or immoral conduct or for gross ignorance or inefficiency or for fraud in procuring admission to practise, on charges to the Board under oath. A conviction of felony forfeits the license.²

The provisions as to licensing and registration do not, however, prohibit an unlicensed person from performing merely mechanical work upon inert matter in a dental office or laboratory; nor a student in a dental school from performing operations for purposes of clinical study; nor a duly licensed physician from treating diseases of the mouth or performing operations in oral surgery. But this article does not permit "the performance of independent dental operations by an unlicensed person under cover of the name of a registered practitioner or in his office.³

One who practises⁴ dentistry, not being licensed and registered,

¹N. Y. Public Health Law Sec. 199 (as amended L. 1917 ch. 129). "If a registered dentist changes his name, he must register his new name, with a marginal note of the former name, and shall note on the margin of the former registration the fact of such change." (Sec. 199) See also Sec. 201 (as amended L. 1916 ch. 129).

²N. Y. Public Health Law, Sec. 201 (as amended L. 1916 ch. 129)

³N. Y. Public Health Law, Sec. 202, (as amended L. 1916 ch. 129). See Dent. Socy. v. Jacobs, 103 App. Div. 86, Sec. 198 subd. 2 (added L. 1916 ch. 129), now provides that "upon recommendation of the board of examiners, the regents may issue a permit to graduates from dental colleges of this state to be employed in registered dental dispensaries, infirmaries and public institutions while under the direction and supervision of a licensed dentist in the interim between graduation and one year thereafter. This permit may be revoked for cause; no such permit shall be issued except such graduate has definite offer of a position in such dental dispensaries, infirmaries or public institutions." The N. Y. Public Health Law Sec. 196 subds. 5 and 6 (added L. 1916 ch. 129) now further provides for one year courses in oral hygiene in dental dispensaries for women who have attended high school for at least one year; and for their graduation, examining, registration and licensing as dental hygienists; these may be employed by licensed dentists, public institutions or school authorities. Such dental hygienists "may remove lime deposits, accretions and stains from the exposed surfaces of the teeth, but shall not perform any other operation on the teeth or tissues of the mouth."

⁴It may be well at this point to call to the reader's attention some of the authorities which have attempted to lay down certain rules and tests to determine just what constitutes the practise of dentistry within the meaning of various statutes. The N. Y. Public Health Law Sec. 190 (as amended L. 1916 ch. 129) now provides that "A person practises dentistry within the meaning of this article, who holds himself out as being able to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity, or physical condition of the human teeth, alveolar process, gums, or jaws, and who shall either offer or undertake by any means or method to diagnose, treat, operate, or prescribe for any disease, pain, injury, deficiency, deformity, or physical condition of the same." A dentist has been defined as "one whose profession is to clean and extract teeth, repair them when diseased, and replace them when necessary by artificial ones; one who practises dental surgery and mechanical dentistry" is a dental surgeon or a dentist. The words "dentist" and "dental

is guilty of a misdemeanor, and is liable to fine and imprisonment. Every practitioner of dentistry must display in a conspicuous place on the house or office wherein he practises, his full name. If there are more dental chairs than one in any dental office or parlor, the name of the practitioner practising at each chair must be displayed conspicuously on or by said chair in plain view of the patient. A violation of this provision is a misdemeanor.¹

In addition to these provisions certain statutes have been passed imposing restrictions upon the sale of habit-forming drugs. Druggists are prohibited from selling or giving away any opium or any salts, alkaloids or derivatives of such drugs, except on written prescription of a duly licensed physician, veterinarian, or dentist. Such prescriptions must contain substantially the following: (1) Name in full of the physician, veterinarian, or dentist issuing same; (2) His office address; (3) Name and age of the person to whom issued; (4) Date under which issued. It is unlawful for any physician, veterinarian, or dentist to issue a prescription, or dispense, give or deliver any of the said drugs except after a physical examination of any person for the treatment of disease, injury, or deformity. Whenever a prescription contains more than 4 grains of morphine, 30 grains of opium, 2 grains of heroin or 6 grains of codeine, the druggist must first verify the authority of the prescription. Druggists may not give a copy of such prescriptions and may fill same but once, and shall keep such prescriptions on file. Dentists, physicians, or veterinarians should procure from the State Commissioner of Health a book of official order blanks on which all

surgeon" are synonymous. 9 Am. & Eng. Encyc. of Law, 274. As to the distinction between the terms "dentist" and "physician," see *People v. Phippin*, 70 Mich. 6; *State v. McMinn* 118 N. C. 1259; *State v. Fisher*, 119 Mo. 353; and cf *Matter of Hunter*, 60 N. C. 447; *Cherokee v. Perkins*, 118 Iowa 405. In *State v. Beck*, 21 R. I. 293, the court said: "Dentistry is now a well recognized branch of surgery. A dentist is a dental surgeon. He performs surgical operations upon the teeth and jaw, and, as incidental thereto, upon the flesh connected therewith. His sphere of operations is included in the larger one of the physicians and surgeons." That dentistry is not a trade, and that a dentist is not a mechanic, see *Whitcomb v. Reid*, 31 Miss. 567; *Demers v. O'Connor*, 10 Quebec L. R., Super. Ct. 371. But see contra, *Maxon v. Perrott*, 17 Mich. 332.

¹N. Y. Public Health Law, Sec. 203 (as amended L. 1916 ch. 129 and by L. 1917 ch. 507). This section also prohibits the purchase or sale of any dental diploma or certificate, and provides heavy penalties for violation of these provisions. It further provides that any one who in any affidavit or examination relating to the practising of dentistry, wilfully makes any false statement in a material regard, is guilty of perjury. Practising dentistry under an assumed name is prohibited. See also Sec. 194 in connection with this section. As to what constitutes practising dentistry within the meaning of the statutes, see N. Y. Public Health Law Sec. 190 (as amended L. 1916 ch. 1290; *State v. Newton*, 81 Pac. (Wash.) 1002; *State v. Sexton*, 37 Wash. 110; *Dental Society v. Jacobs*, 103 App. Div. 86. See also note 68.

orders for purchase of such drugs must be written, and the druggist may fill orders only on such official order blanks.¹

"All persons authorized by law to sell, administer, prescribe, dispense, or dispose of any of the drugs enumerated . . . shall forthwith keep on record the name and address of each person to whom such drug is dispensed, given or in any manner delivered, and the quantity so dispensed, given or delivered, and all such persons shall likewise keep a record of the disposition made of any quantity of any such drugs . . . whether such disposition be in the preparation of compounds or otherwise, and if used in the preparation of compounds the quantity so used in each compound and where placed. Such record shall be preserved for two years and shall always be open for inspection by the authorities, charged with the enforcement of the provisions of this article.²

There are many other interesting and useful topics touching upon the relation of the dentist to the law, and I might go on if occasion offered almost indefinitely in considering some of these, but the few lines preceding are not intended in any way to be a full discussion or textbook on the subject of Dental Jurisprudence.³ My aim has been simply to acquaint those who have just become or who are about to become practising dentists with a few of the fundamentals of this highly interesting subject. If I have done this, I have accomplished my purpose.

220 BROADWAY.

¹N. Y. Public Health Law, Secs. 245-249-f incl. (as amended L. 1917 ch. 431).

²N. Y. Public Health Law, Sec. 248 (as amended L. 1917 ch. 431). Sec. 249 of the same act makes similar provisions for the regulation of the sale of hypodermic syringes or needles. Sec. 248-a (added L. 1917 ch. 431) provides that "no dentist shall issue any such prescription for, dispense or furnish any of such drugs for the use of any person not then under his immediate treatment as a dentist or for any other purpose than as a part of such treatment, and no dentist shall dispense, furnish or issue a prescription for any of such drugs in quantities greater than is necessary for the immediate treatment of the person to whom the drugs are furnished." See *People v. Cohen*, 94 Misc. 355.

³See Rehfuss "A Treatise on Dental Jurisprudence." Garrison's article on "Dental Jurisprudence" in American Systems of Dentistry. Williams' on Physicians, Druggists, and Dentists; and see various standard works on Medical Jurisprudence by Wharton and Stills, Taylor, and Poore.



A CENTRAL MOLAR

Dr. Wm. M. Post, of Hood River, Oregon, has submitted a plaster model showing a tooth, presumably a malformed central, which had displaced the left central.

The right central had never erupted so, in the absence of an X-ray, the anomalous tooth, which looked like a molar, was thought to be the right central.

The left central can be seen displaced labially just above the "freak."

**AMERICAN INSTITUTE OF DENTAL TEACHERS**

The next annual meeting of the American Institute of Dental Teachers will be held at Hotel Schenley, Pittsburg, Pennsylvania, January 29, 30, 31, 1918.

The meeting as usual will be devoted to dental teaching—a number of the papers will deal with situations arising from war conditions. A cordial invitation is extended to all interested in dental teaching.

ABRAHAM HOFFMAN, Secretary,
381 Linwood Avenue,
Buffalo, N. Y.



DENTAL SURGERY AT CAMP HANCOCK

HEADQUARTERS TWENTY-EIGHTH DIVISION

By C. JUDSON HOLLISTER, 1st Lieut. Dental Corps, U. S. N. G.

SECOND PAPER

In the past month our dental corps has been entirely changed. It used to be that each regiment had one or two dentists attached but now we are divided into three units of eleven men each which gives a dental unit to each brigade. This is an entirely new plan and it is hoped that it will be much better than the old way of having the men work independently.

While I am not working with any unit, having had a dental ambulance donated for my use, yet I take time to visit the brigade dental offices. The sight of these offices takes me back to the day spent in the college infirmary with its long lines of chairs filled with suffering patients. Here it can be truthfully said that all the operators are as gentle as possible and the boys are receiving the same careful attention they would if they were "Pay patients" back home.

The dental corps has a meeting once a week and to me these meetings are of great value for the subjects discussed are not so much theory but more of the real practical side of dental problems as we find them in our work here. If you were to visit one of these meetings I am sure that you would note the enthusiastic spirit of the entire corps. Every man seems to realize that we as dentists, have a big part to play in keeping the health of the soldiers up to standard.

One of the most gratifying things to me personally is to note the attitude of the line officers and the medical department toward the dental corps. They are all enthusiastically with us and are beginning to realize that they can't make an efficient, healthy soldier out of a man with bad teeth, so now they are putting it up to us to give them the foundation on

which to build the fighting machine that must give account of itself in battle in the near future.

While in Philadelphia on a short leave of absence, I talked with several officers from other camps and learned that the same feeling exists in all the camps as it does here, that the dentist has a very important duty and place in the making of the soldier.

The day before I left camp for home a private presented himself at my "Office" and requested that I extract some teeth for him and I tell his story because it shows how the men in the ranks feel about the grim duty that lies before them.

This young man, I learned by questioning, had never used a tooth-brush but my questions would have been unnecessary had I looked at the mouth first. He told me that the medical officer of his regiment ordered him to get his mouth cleaned up or he would be discharged from the army. When he told me this I became more interested for I had imagined that any of the boys would jump at the chance to get back home but not so this boy, for he fairly begged me to fix him up so that he could stay in the army.

After talking to him for a few minutes, during which time I injected some "psychological anesthesia," I started to operate. I might pause here to say that most of the army extracting in the past has been done by the "cold steel method." I took out 13 roots and they were the toughest I have ever come in contact with. Most of them were so firmly attached to the process that pieces of process came with the roots. It took me the better part of two hours to complete this little job and from the "Put yourself in the other fellow's place" standpoint I had a profound admiration for the nerve of this soldier who stood this operation without a murmur. After I had taken all the roots out and had washed the sockets with pure iodine he said to me in a grateful voice: "Now I can stay in the army." After this ordeal (for it surely was one) he was able to go to quarters under his own power. Taking out 13 roots may not seem like much of a job to some of you back home in your city offices with anesthetics, etc., but under the conditions in which we work I can tell you it is an entirely different matter.

We are trying to save teeth wherever possible rather than extract and I have had the opportunity of building up many badly broken down teeth with amalgam which would otherwise be lost. While we are not able to spend very much time on any one patient the golden rule is our motto in our work and I can say that I am doing the best I know how all the time. The reason I make the above statement is to correct any idea any one might have, that because we are in the army and the patient has no "comeback" that we get careless. It is true that it would be easy to

do our work in a disinterested, careless way, but the spirit of real duty and service too strongly permeates our corps to allow such a condition to exist.

A moment ago I said that we were compelled to extract almost entirely by the "cold steel method." On the day of this writing I have received a gas machine complete.

The purchase of this humane equipment was made possible by the generosity of the Emergency Aid of Philadelphia the officers of which went into their own pockets to provide this means of lessening the suffering of the boys in the army. To my knowledge this is the first gas machine to be used by the dentist in the army but whether this be so or not it goes to show that in the training of the men for the present war we as a nation are doing everything in our power for the comfort and welfare of those who have sacrificed so much that they might serve their country. I say the best is none too good for them and one of the things that will do much to keep up the morale and spirit of our boys in the service is for you back home, where you are going to your business very much as usual and back home to your own comfortable fireside, showing the boys who have given up home ties that you are with them heart and soul. There are many ways in which this can be done but my time and space will not permit me to make suggestions and anyway I am drifting from my subject.

As the weeks go by I am more thoroughly convinced that the dentists of the army now have a great opportunity to make dental history which will help to elevate the profession to the position it should hold. We cannot be responsible for doing all of the work for the profession, but I think we have a wonderful opportunity of proving what the teaching of oral hygiene and the resultant clean mouths, as well as the repair work done by us, will do for the health of the soldiers.

TO EVERY AMERICAN DENTIST

By J. W. BEACH, PRESIDENT OF PREPAREDNESS LEAGUE OF AMERICAN DENTISTS

President Wilson has asked that every resource for winning the war be utilized to the very limit. The dental profession forms one of the greatest resources for making our Army efficient. You are an integral part of this great source of help to your country. Will you meet this responsibility as an American citizen should? Of course you will!

HOW CAN IT BEST BE DONE?

By joining the Preparedness League of American Dentists now and assisting in its great work. Ten thousand new members are needed right

away. If you are already a member, we ask you to get at least five more just as soon as possible. The mouths of the men in our New National Army must be made healthy and dentally fit before they go to cantonments and we must help to the limit of our ability.

The Preparedness League of American Dentists is a recognized agency for carrying on this work under the direction of the Surgeon General's Office of the War Department, the National Dental Association and the Committee on Dentistry, Sub-Committee of the Council of National Defense.

There are forty-five thousand dentists in the United States. Six thousand belong to the League and have done the major part of the following work: July 16 to Nov. 3, 1917: Fillings 60,946, Extractions 35,909, Cleanings 2,233, Crowns 133, Bridges 184, Plates 165, Unclassified operations 6,891. Total 111,061. Thousands of operations not listed were performed prior to and since these dates.

If every one of the 45,000 had done his part, what a splendid showing we could have made. It is not too late to become a part of this great work for increasing the fighting power of our army. We know you are with us.

Don't Let Germans Show All the Efficiency! Let's Show What We Can Do.

We've got to work together to win this war. Do your part by joining the League to-day and we will give you real, properly directed work to do.

For membership send one dollar (\$1.00) payable but once, to the Preparedness League of American Dentists, 151 Allen St., Buffalo, N. Y. Kindly enclose business card to avoid mistakes in name and address.

A WORD FROM TABOGA ISLAND

German Detention Camp,

TABOGA ISLAND, REPUBLIC OF PANAMA.

November 17th, 1917.

Editor DENTAL DIGEST:

Greetings from this little island in the Pacific, where I have been detailed on temporary duty, from my permanent post at Camp Gaillard, Canal Zone.

I am working on the Germans who are interned here, doing general dentistry, including some crown and bridge work. Under the existing circumstances it is quite difficult to obtain good results on the latter but on the whole I have been successful in all I have undertaken.

There are about 3,000 souls living on this island, depending mostly on fishing for a living. Here one may find cases of hookworm, beri-beri, and even a leper colony a few miles away on another island.

The water here contains iron, and I have had quite a little difficulty scaling the teeth of the internes, due to the tenacious deposits.

The dental corps is highly respected in the army and our work appreciated; let this be a tip to our many so-called oral surgeons, who in offering their services to their country try to avoid the work of general dentistry, which is after all the most important work that we dentists can do.

Fraternally yours,
LEONARD JACKSON HEIMAN,
1st Lieut. Dental Reserve Corps, U.S.A.

ARMY DENTAL CORPS

While the surgeon general of the Army has discontinued for the present examination of applicants for the dental reserve corps, as already stated in these columns, two exceptions are made as follows:

First, since the medical department will have need of certain dental specialists in various locations in this country and abroad, applications will be considered of such men as are especially well qualified in such branches as the needs of the Army may demand. The dental specialists needed at this time are to be found among those who have had experience in the management of fractures of the jaws, and minor or major oral surgery. Applications for appointment in the dental reserve corps will, therefore, be considered of men qualifying in the work above outlined.

Second, when a dentist is drafted and has been physically accepted by those in charge of the camp where the dentist has been sent as a private, he may then make application for appointment in the dental reserve corps through the proper channels to the dental surgeon there in charge, who will promptly have completed papers sent to this office for final action, when an additional number of dental officers are required.

ADVANCEMENT IN DENTAL CORPS

In accordance with the recommendations of the surgeon general, of the 178 members of the dental corps, 12 will be promoted by seniority to colonel, 20 to lieutenant colonel, and 87 to major, leaving the remainder in the grade of first lieutenant for the time being. These advancements will take up at least to the grade of major all that were members of the dental corps at commencement of the war and some that have entered since that time. The surgeon general's office also is making arrangements to recommend a corresponding reorganization in the dental reserve corps and to give increased rank to selected officers whose attainments and records warrant recognition.—*Army and Navy Register*, Dec. 22, 1917.

TEACHING ORAL HYGIENE TO RECRUITS

By H. J. BRACHMAN, D.D.S., U. OF P., 1909, MT. CLEMENS, MICH.

Dr. Brachman has learned one of the most important of all arts, that of talking to people so that they can understand. It would be easy for most of us if we didn't think that we ought to do something extraordinary when we talk to people. If we had the courage just to dare to be ourselves and to say the natural things, we should help people much more than we do.

Dr. Brachman's suggestion that dentists who have conscientious scruples against subscribing to the tobacco fund, might establish a "tooth-brush and toothpaste fund" with the same recipients, is excellent.—
EDITOR.

With this country at war and a large number of dental surgeons in active service "With the Colors," the experiences of a colleague may be of interest to members of the dental profession, particularly the suggestions intended to produce the coöperation of the personnel of our forces with the dental surgeons and incidentally produce a mutual understanding that should prove of mutual benefit.

I arrived at my post, "Somewhere in America" one Monday morning, just three weeks ago, reported to the Commanding Officer and then to the Chief Surgeon for duty. He introduced me to my associates at the Post Hospital, two other Medical Officers, and they all acted very kindly and coöperated with me in every manner. A room in the building was assigned to me for a dental office, the number of men here having been augmented only a few days before to approximately the quota required by army regulations to necessitate the services of a dental surgeon.

After having been comfortably quartered, I was anxious to begin my work and at the suggestion of the Chief Surgeon, wired my requisition for a portable outfit, mailing the regulation order the same day.

Realizing that there would be a necessary delay, due to the great number of demands for outfits of similar nature that had preceded mine, I decided to spend the time that would elapse by examining the mouths of the men in squads of twelve, after giving them a sort of heart to heart talk on the care of the teeth and the reason thereof. Accordingly, I secured some examination charts, mouth mirrors and explorers and announced that I would be ready to proceed as per the above, the following Monday morning.

A squad of twelve men reported at my office each hour and from the first they paid strict attention to what I had to say and starting with an eight minute talk, I found before the week was over that I was giving a thirty minute one that seemed to impress the "boys," as their interesting questions at the end of each session led me to believe. I found that I

could not examine the mouths of all the men in the entire outfit before the arrival of my instruments and being anxious to give them all a few words of advice on the care of the teeth, I arranged and talked to the balance in squads of 100 at 5.30 each evening at their respective mess halls, immediately after supper, so that my talk would not interfere with any military or social duties that may have been scheduled.

To make a long story short, a great many of the men began to take more interest in the care of their mouths and teeth. The reports of the top sergeants informed me of increased activity in the tooth brushing industry and I personally determined from the Post Exchange and the druggists in the town proper that the sale of toothbrushes, paste, powder and mouth wash had taken a big boost. I felt that my time had been well spent and that the results more than justified my humble efforts.

In my talk, I would start by informing the men that, being in the army they naturally were supposed to be able to stand pain, exposure, etc. When a slight pain in a tooth occurred, as army men, they would not pay any attention to it until too late and then have it extracted having somewhat considered the care of the teeth as savoring of vanity, and not absolutely necessary as there was no specific time scheduled for it in army routine. I would then inform them of how necessary bridge work, to replace lost teeth, would impair the longevity of the abutments. The crowning of a tooth with gold covering a multitude of sins when it could be filled was likened unto the ostrich who, because he stuck his head in sand and could not see any one, imagined that no one could see him.

For the sake of comparison, the abscesses, or gum boils as they called them, were likened unto the abscess on a bone felon that they would suck. Rather a grawsome comparison, but nevertheless a true one, and decayed teeth and their effect on the normal teeth was explained by the effect of the "spoiled apple in a barrel of good apples."

The mouth, with its teeth was spoken of as the carburetor of the body, for in the same manner that the carburetor of a motor would break up the gasoline so that the necessary power would be forthcoming from the cylinders to propel the vehicle, the teeth prepare the food to be digested by the digestive tract to produce the necessary strength and stamina to withstand the rigors of army life together with its exposure to inclement weather. Therefore the importance of keeping the mouth in normal condition was made obvious. The fact that a well nourished body increases the immunity against infection and insures a more speedy recovery in the event of being wounded was brought to their attention with forcible illustrations.

In order to savor of a military routine the brushing of the teeth was

called, "The toothbrush setting-up exercise" for the reason that in the same manner that the setting-up exercise creates a healthy circulation of the blood, the proper toothbrush manipulation creates a healthy circulation in the gum tissues with just as exhilarating effects. There were thirteen figures (hard luck to deposits on the teeth), and they were requested to go through this exercise at least twice each day, night and morning. They were reminded that the germ is possibly more deadly than the German and the reason for brushing their teeth before retiring was to allow the body to charge up on energy properly while "at ease" in the same manner that any battery will be charged up when connected with a charging station.

Quite a number of men who have seen service "over there" inform me that the natural tendency is to neglect the teeth and this is a condition that we must try to guard against among men.

If I may be so bold, I would suggest that the dental surgeons, in active service, take the men into their confidence with heart to heart talks as outlined.

As there are a great many people who would like to contribute to a personal comfort movement for the men in service, but as they do not approve of the use of tobacco, they have not subscribed to that fund and I would like to suggest that the civilian members of the dental profession inaugurate a movement in their respective communities for a "tooth brush and tooth paste fund," worked along similar lines, in order to bring the absolute necessity of the care of the teeth to the minds of the men in a forcible manner, a pamphlet embodying a heart to heart talk on this subject could be enclosed in each package.

In order to avoid misunderstanding, I do not mean to infer by the above that the men are neglecting their teeth, but I do want to state that a movement such as this would properly educate them for the future so that their mouths would not be in the poor condition that inevitably results from a sojourn in the trenches where proper dental care if not firmly drilled into the minds of the men, is so likely to be neglected as the experiences of our allied dental officers teach us.

THE JUNIOR RED CROSS

A PLAN TO UTILIZE THE PATRIOTISM OF SCHOOL CHILDREN

A new class of members, the Junior Red Cross, has been created for school children, who are admitted, by school units, to a share in Red Cross membership and relief work upon payment of a membership fee of twenty-five cents per pupil.

CORRESPONDENCE

Editor DENTAL DIGEST:

In reply to M. A. M., I take occasion to express my views on the use of arsenic or arsenic acid, as a devitalizing agent.

He seems to have the all too prevalent idea that arsenic can devitalize a tooth in a very short time. Now I have been using arsenic for twenty years, and my father used it for thirty-five years before me, and I have some things to say about its use, based upon my personal experience, as well as my father's.

He made a practice of having arsenic in a tooth for ten days, and always got good results—no trouble followed.

For some reason I found that one week served my purpose, and when I place it in a tooth, I always let it stay a week, except when placed in temporary teeth; then for only a day or two.

It takes arsenic a week to devitalize pulp, and even then there will be a small portion near the apex that will not be thoroughly dead, which I usually finish up by pumping carbolic acid, or rather, leading it along the canal by the aid of a smooth broach. The pulp will come out of the canals whole, giving a slight twinge of pain as the dead pulp is severed from the living nerve trunk at the apex.

Students are taught in colleges to remove the arsenic after twenty-four hours or so. You will never find a pulp dead for any distance in the canals after so short a time. This half killing of pulps has brought the use of arsenic into disrepute with the laity.

Arsenic will do no harm if left in a tooth for a week; there will be less soreness than that following the use of any other agent.

I use a dental anesthetic (cocain, morphine, and atropine) under pressure when I have cases of hyperemia of the pulp in which case the pulp would not absorb arsenic, and its application would increase pain.

An alveolar abscess will never follow the use of arsenic, nor will it ever occur even though you fail to completely fill the canal. But the canal contents must be thoroughly removed in all cases, and carbolic acid pumped to the apex with a fine broach, and you may rest easy as to that tooth remaining comfortable and aseptic. The so-called "devitalizing pastes" containing arsenic are unreliable.

Some of them will remain in the tooth and do the work, but after the paste has been in the office for some time it loses its power to devitalize in a reasonable time. And the same may be said of arsenic acid. It has been the practice of the writer to throw away old arsenic acid; some change takes place. Perhaps it takes up oxygen from the air, and becomes arsenous acid, which is less active. Arsenic acid destroys vitality in flesh, but it preserves it from decomposition, or putrefactive changes,

to which power I attribute its extreme usefulness as a devitalizing agent. It is only its careless sealing in the cavity that causes trouble. I use cocaine under pressure, and often remove vital pulps under somnoform anesthesia, but much prefer arsenic acid, where its application will not cause pain, and where time is no consideration.

It is unnecessary to add that the canals should be opened up and filled as thoroughly and aseptically as possible.

W. H. R.

Editor DENTAL DIGEST:

I now have a question to settle and I have often wondered how I should settle it did it ever come to my lot to decide. It now comes in the form of the question of what career to advise for a protégé of mine, my young nephew, who is completing his academic education.

By reason of his talents and personality I am convinced I should advise him to adopt either the profession of medicine or the profession of dentistry, in either of which I am satisfied he would make no small success and one or the other of which he desires to take up. I have often wondered what would be the advice resulting, if the average were struck from the sum of advice given by a considerable number of representative dentists regarding such a matter. Would the nature of this average advice mean that dentistry as a factor for human good was a success or a failure? Would it mean that dentistry as a developer of the dentist's character (taken in the broad sense) would warrant the devoting of a life to it, rather than to the practice of medicine?

The following words represent to my mind how the successful dentist views his profession. He regards it at present as but a pioneer in the realms of public appreciation, recognition and human service. He believes that its possibilities as a healing art and science (not "the healing art") are practically unlimited. He realizes that it is no longer in fact little more than a mechanical trade and in theory only, a profession. But as he considers these facts his thoughts seem always to point toward the same idea. And that idea is that dentistry is a specialty of medicine, practised without the degree of Doctor of Medicine, unlike the other specialties of medicine. Now if, as it appears by natural and logical reasoning, dentistry is to be eventually absorbed into medicine, should not the educating of the future dentists be that of the medical student with an added year or two or more if necessary to obtain the requisite dental qualifications? Would this not at one stroke raise the status and broaden the usefulness of dentistry? Then why not so educate the coming generations for the practice of the specialty of dentistry? I think this is a question of sufficiently imminent import to warrant a very free and full discussion in the forum of our dental magazine. W. H. B.

OFFICE EXPERIENCES

[I shall be glad to have *bona fide* Experiences from dentists for this department, and for each experience accepted for publication, the DIGEST will send the writer a cheque for \$2.00. The articles need not be lengthy.—EDITOR.]

Editor DENTAL DIGEST:

I have a lady patient who has developed within the past 6 months a swelling of the parotid glands, which makes her cheeks stand out as though she has a "cud" in her mouth.

Her physician has drained through Stenson's ducts but affords no relief. He was working on the theory that they were obstructed from draining.

Patient first complained of dry and feverish mouth, but the dryness has disappeared and she has plenty of saliva now.

These enlargements are increasing.

Age of patient about 35 years and single.

Can any of you DIGEST readers give me any light on this case?

Will be greatly obliged for same.

Yours sincerely,

G. O.

CAN ANY ONE FIGURE THE COST?

The following letter rather staggers Dr. B. L. L. and he fails to figure out the cost of the work the patient desires. Can any of our readers do it?—EDITOR.

Sept., 1917.

DR. B. L. L.,

DEAR FRIEND:

We would like to know if you are still in Eugene. I am thinking of taking a trip there the last week in October to visit friends and would like you to do some work for me. Have two crowns, two bridges, and there might be one filling. Give me your figures on this work, would rather you would do the work than anyone I know of. The work you have done has been satisfactory. The right upper bridge will take in the first molar from front and the second directly below it, two crowns lower third tooth counting the front one, and the same one on the other side have

silver fillings in these worn down, dont think there will be any treating to do to these. My fare to Eugene and return would be \$8.00. Now if you can make this cheap enough, I will gladly give you the work. Wish you were in Portland and we could go there to have our work done. We will have to do without other things to have this work done. Dr. we would like you to bring your family and make us a visit. Hope you have had a pleasant vacation, Josi was home 7 weeks during the summer. She has returned to the State Normal School at C—— expects to graduate next June 18 very lonely without her.

Thomas enjoys good health, wears a smooth face.

Our late garden on the Lake bottom, 2 acres potatoes, 3,000 cabbage carrots, peas and beans, looking fine, nice rain and plenty of it.

Yours respect.

MRS. M. B.

Editor DENTAL DIGEST:

Enclosed find a letter sent me after two years, when enforcing payment. I thought it might be of interest to DIGEST readers.

Respectfully,

A. C. E.

Wolbach, Nebr.

Oct. 1916.

DEAR SIR:

just got your letter and will say I am not sadesfide with my teeth at all and entended in coming up to see you and I was told you wasent there so I was in a hurry and did not go up. I can not wair my lower teeth at all and my uppers are so big that I snesed and they fell out.

and I wold of paid you the nexed week as I promised but I though it over and it was as brod as long I did not feel like paying for them till I was shure they wold fit me and I had paid better then half so I though it was right on both sides as my teeth dont fit at all and when I talk my teeth drops down in my mouth some times but I now it haint your falt as I suppose my gooms have shrunk but I be down and see you before long but my lower I cant wair at all I go to bite on the one side they go down and come up on the on the other so I now you wold be just like me you woldent want to pay for them tell they sadesfied you. but if your cold let me now when it wold be convenient I maby cold git down I though perhaps you wold be sending the shirf after me for not doing as I promised ha bring your Wife & baby out some of these sundays and viset us the trip in the country wold do them good I remain as ever yours truley

MRS. J. B. W.

CURIOUS, TO SAY THE LEAST

The daughter of a prominent banker of this place came to have her teeth examined, I found everything in good condition with the exception of a cavity in the upper left second bicuspid which tooth had erupted out of line on the palatal side. The first bicuspid and first molar were in contact and together with the second bicuspid formed a triangular space which could not be cleaned readily and therefore the cavity in the side of the second bicuspid.

The only practical thing to do in this case was to extract the misplaced bicuspid, and ("here is the office experience") the patient agreed with me, with the proviso I use no forceps in its removal. Here was a patient who had never had a permanent tooth extracted, in such a dread of forceps she was willing I should proceed in any other way. So after using a local anesthetic I loosened the tooth by use of an old chisel (ground wedge shape) and a bone mallet, finally removing the tooth with a regular curved elevator. Even after the tooth had been loosened to a large degree she refused to permit me to use the forceps to lift it out. It goes to prove some of the set ways and notions of our patients.

HERE'S ANOTHER

Yesterday while assisting me at the chair, my assistant asked me whether a Miss So and So had a full upper set of teeth. I knew who the young lady was and remarked "I thought so." Now then! Within five minutes of that conversation, in stepped the young lady in question to have two lower molars extracted, she had never been in my office before and neither of us knew of her coming. Where does this experience fit in?

DR. H. D. M.

THIS IS FUNNY

P—, Ky. Sept. 19-17.

Mr R C D Dear Sir i think you carged my wife to muck for fucking her teeth you charged he 14.00 and tha way i figer it it ought to a Been 8.25 you only billed five whitch woud a Been 2.50 and Pulled to witch woud a Been 75. and Put in a litle Place ob Gold and it oughtent to a coust over 3.00 and you oughtent to a charged over 2.00 for cleaning her teeth and i think you owe me 5.75 and i wont you to send it to me and send me a statment and i wont to here frum you at once to

yours truly

Mr T J R

Editor DENTAL DIGEST:

It struck me this letter might be interesting enough to publish. I extracted this woman's teeth and charged her \$3. When she came for an impression for a set, I told her what it would cost, and she apparently was satisfied. I made a trial plate, and when she did not keep her appointment, for a try in, wrote her asking the reason. She replied, stating she had a set made for ten dollars, somewhere else, and my price was too high. I then sent her several statements for \$3, for my time in taking impression, and setting up teeth. This following is the reply I received.

Yours truly,

F. R. S.

DR. S:

I have resievied all your letter stating I owe you three dollers now what profit did I have of those three dollers I paid you ful for pulling my teeth and all the gold filling I had You didnt give me a cent reduction for and a party told you you did give reduction now because I didnt ask you you got that all for nothing and then after more if I desited to have my set made by another dentist its my own bissness and you asked to much any way for a set of teeth why didnt you say you would make me a set for 10 dollers no you asked such a high price and now you think I am wiling to hand you three dollers you can take that of on the gold in the teeth You trulley

MRS. GUS. B.

WAS IT SURGICAL OR NOT?***Editor DENTAL DIGEST:***

Several months ago I had a case of unusual interest to me which I hope may be discussed through the DIGEST.

Man working in a garage pumping up auto tire, tire exploded knocking him down, broke his arm, and knocked out a porcelain crown on central incisor, rendering him unconscious for some time.

The agent representing the Casualty Insurance Company took patient to hospital and after he was able to leave hospital, brought said patient to me to have new crown placed on incisor root telling me he (the agent) would reimburse me which he did. When the agent applied to Company for the insurance due, said Company allowed bill at hospital for care of broken arm but refused to allow bill for repairing tooth on the ground that dental services *were not surgical*. Were my services of a surgical nature or not?

Yours truly,

S. F. H.

DIETETICS AND HEALTH

EFFECT OF HIGH PRICES ON THE CONSUMPTION OF MILK

To determine to what extent the high price of milk had affected its consumption among the children of the poor, an investigation was made in October under the joint auspices of the Department of Health, the New York Association for Improving the Condition of the Poor and a Committee on Milk appointed by the mayor, among 2,200 New York families each containing from two to six children, or 12,439 individuals in all. Of these 4,467 were adults and 5,438 were children under 6 years. The total amount of milk purchased by these families was 3,193 quarts as against 4,797 quarts a year ago. This decrease was partially offset by the daily purchase of 141 tins of condensed milk. The amount of milk which physiologists and pediatricians have estimated as the normal amount required by all of the persons considered is 8,194 quarts. It was found in the investigation that 121 families were getting more milk than a year ago, 599 families were getting the same amount, 1,480 families were getting less, and 420 families were now getting more condensed milk. Of the families getting less milk, over half (969) were getting from 25 to 50 per cent. less. Two thousand one hundred and forty-eight children under 6 years of age were drinking tea and coffee. The foregoing is set forth in the *Weekly Bulletin* of the Department of Health, Nov., 3, 1917. The commission appointed by Mayor Mitchel to investigate and report on the possibility of preventing a further increase in the price, or of lowering the present high price, which was 14 cents as against 9 cents a year ago, in their representations to the dairymen's league made the following statements (same publication): 1. The present high cost of milk has reduced the total supply of the city by approximately 25 per cent. 2. In many sections of the city it has reduced the quantity of milk used as much as 50 per cent. 3. In some sections of the city the quantity used by infants and children has been reduced below the minimum which the best medical science considers necessary for the maintenance of health. 4. There has been a recent increase in infant mortality which the health department believes to be due to a decreased use of high grade milk.—*Journal American Medical Association.*

FRUIT ACIDS

Although fruits are held by some persons to be a luxury rather than a dietary necessity, they have recently come into a greater popularity than ever before in the ration of man. The typical American breakfast provides for fruits of some sort as a part of the menu. They enter likewise into the larger meals of the day, and thus secure prominence whether it be because they are regarded as stimulating to the appetite, as endowed with laxative properties, as sources of actual nutriment, or merely as adding a pleasing variety to the diet regardless of any unique dietary virtues. Almost all fruits contain sugar. Experts in nutrition at the present time are inclined to assert that fresh fruits and vegetables, although watery, are convenient sources of many of the substances which are needed by the body in small amounts. Quoting a government publication,¹ it is, in fact, generally believed that, unless these foods are used to some extent, the diet will be lacking in mineral materials and in other important growth and health promoting substances. They are, however, not important sources of fuel. They contain little protein and no fat. The evidence of the extent to which fruits are used lies in the fact that the crop is valued at considerably over 200 million dollars, of which the major share belongs to the orchard fruits. Nearly 200 million bushels of apples alone are produced in the United States each year.

All of the fruits contain noticeable amounts of organic acids, varying with the species involved. As a general rule the acidity tends to decrease with the progress of the ripening. The nature of the acids present has hitherto been anything but accurately determined. In a general way it has been the custom in some quarters to distinguish between highly acid and "subacid" varieties—distinctions of a quantitative rather than a qualitative character. The acidity of fruits is said to be largely due, not to free acids, but to acid salts, of which the acid potassium tartrate (cream of tartar) of grapes may serve as an example.² However, more than an incidental interest attaches to these questions. Not only may different acids have unlike rôles in promoting some of the effects, such as laxative action, now vaguely assigned to fruits; but there is reason to believe that some of the fruit acids, such as tartaric and benzoic, are oxidized with difficulty if at all in the body. The more readily burned fruit acids act to promote potential alkalinity; for when the organic radicals are oxidized to carbon dioxid and water, so much of any base as was combined with the organic acid remains as a carbonate.

¹ Hunt, Caroline L.: *Fresh Fruits and Vegetables as Conservers of Other Staple Foods*, U. S. Dept. Agr., Farmers' Bull. 871, July, 1917.

² Sherman, H. C.: *Food Products*, New York, 1916, p. 352.

Thus, contrary to the popular belief, in metabolism most of the acid fruits actually function as base-forming foods. In accord with this the use of fruits tends to diminish the acidity of the urine, except in those cases in which, owing to incomplete oxidation of the fruit-acid in the system, the potential alkalinity is not fully realized. Blatherwick¹ found, for example, that such foods as oranges, raisins, apples, and bananas are very efficient in reducing the acid output. A further importance of the fruit acids is associated with the part they play in jelly making.

The Bureau of Chemistry of the United States Department of Agriculture has undertaken a critical investigation of the acid content of fruits. The chemists, Bigelow and Dunbar,² state that the burden of evidence in the literature indicates that tartaric acid is not an ingredient of fruit juices except, of course, grape juice. Citric and malic acids are the characteristic acids found. Succinic acid may occur in small quantities, especially in unripe products. Salicylic, benzoic, and formic acids have been reported now and then to occur in traces, the presence of benzoic acid in cranberries and plums being more conspicuous. The acids of some of the fruits like the apricot have not been positively identified. The behavior of citric, malic, and tartaric acids in metabolism has recently been discussed in some detail in the *Journal*. The tentative conclusions reached by the government bureau indicate the following results:

Fruit	Acids found
Apple.....	Malic only.
Banana	Probably malic only.
Cantaloupe	Malic none—probably all citric.
Cherry	Malic only.
Cranberry	Citric probably predominates—malic also present.
Currant	Citric probably predominates—malic sometimes present.
Gooseberry	Malic and citric.
Peach	Probably malic only.
Pear	Malic only in some varieties; citric probably predominates in others with small amounts of malic.
Persimmon	Probably malic only.
Plum	Malic only.
Pomegranate	Probably all citric—no malic or tartaric.
Quince	Malic only—no citric.
Raspberry (red)...	Probably citric only—malic, if present, in traces only.
Watermelon	Malic, no citric.

Bigelow and Dunbar say that these generalizations are not offered as final statements. It is possible that later work may modify them in some particulars.

¹ Blatherwick, N. R.: Specific Role of Foods in Relation to Composition of the Urine, Arch. Int. Med., September, 1914, p. 409.

² Bigelow, W. D., and Dunbar, P. B.: The Acid Content of Fruits, Jour. Industrial and Engineering Chem., 1917, 9, 762.

DENTAL ECONOMICS

DENTAL FEES AND THE POVERTY OF DENTISTS

We have heard much of late about the subject of dental fees and the poverty of dentists as a class. I have even read wherein it was stated that it would seem that the dentists did not want to be helped. I believe this is the chief cause of the trouble. Dentists work as a rule by themselves and are a law unto themselves in a way. If they were compelled to compete as commercial men are obliged to do, they would discontinue selling their services at a loss.

Another element that enters largely into the matter is fear. Dentists are afraid of their patients. They allow the patient to dictate terms and accept the fee much in the same manner as a bootblack or waiter accepts a tip. I have heard dentist and patient bargaining over a set of teeth and have heard the dentist ask the patient how much they would like to pay. Mind you, how much they would "like" to pay. Of course they would not like to pay anything if they could help it. When I make a purchase I am not asked how much I should "like" to pay but am told how much I shall have to pay. The same holds true when I am obliged to make a purchase of services rendered.

I have heard the plumber quoted so frequently that I shall have to apologize for picking on that individual again. But if the dentists think it is a joke as to his business ability they are very much mistaken. In the section where my home is located several dentists and two or three plumbers started about the same time and I want to say that the plumbers were buying property and running 6-cylinder cars before the dentists had paid their college debts. Unless the colleges wake up and give their students a business course with their technical course these conditions will continue to exist and the majority of the dentists will continue to live in poverty. The greatest loss to the dentist in my opinion is in treating teeth. Thousands of our patients have neither time nor money to pay a compensating fee for this class of work. I say that it is better to extract in such cases than to do a poor operation, which naturally follows a low fee, I believe a patient is better off with a missing tooth

than one wherein there is a constant danger of grave systemic disturbances occurring through faulty or incomplete work. The class of patients who can afford to pay should be made to pay but the poor weak-minded dentist is usually bull-dozed out of his fee.

Very truly yours,

G. O. B.

BUSINESS LAWS IN THE PRACTICE OF DENTISTRY*

By JOHN L. KIRBY, D.D.S., CHICAGO, ILL

Law is universal. God moves in a mysterious way but always according to law. Haphazard methods of action are not in harmony with an all-wise Creator. The harmony of the universe is the result of law. Control of giant forces is possible only by adherence to the laws that govern those forces and which are not dependent on the whims or beliefs or caprices of some one person.

Physics, chemistry, music, all sciences and arts are governed by laws that are inevitable and operate the same regardless of province, climate or race. Disobedience to man-made laws brings punishment depending on the executive in charge at the time of their violation. This is not so with the laws of the universe. Violation of them has its punishments; compliance with them has its reward. No favorites are played. In the practice of dentistry there is a department of business controlled by the laws of the commercial world that operate in as positive a manner in their sphere of action as do the laws of chemistry in the combining of elements, or Ohm's law in the resistance of electric energy, or Newton's law of gravitation in regard to falling bodies.

Creed, race, climate, geography have no bearing on these laws, either commercial or scientific. We treat lesions of the tissues and predict success in accordance to the degree that we work in harmony with the laws of physiology in regard to the living cell. Inlays, bridges, dentures and all mechanical restorations will stand or be destroyed as we have adhered to or violated the laws of mechanics.

The impossible is the attempt that is contrary to law. Not the failure due to technique or poor skill. Success is due to adherence to the law whether that law is recognized or not as being responsible. The laws of gravitation have always acted the same on the rock and on the feather.

The wizard of the commercial world understands the workings of the laws that control the commercial world and adheres to their

*Read before the Illinois State Dental Society, May, 1917.

tenets. Among the results desired in the business world is a profit, a surplus, stability, increased earnings, power, good-will, and growth.

Every business house, whether it is a privately owned company or a corporation, has one activity only, they barter a commodity. That commodity, regardless of its form, invariably represents a service in some form. Transportation, telephone, manufacturing, mining, or farming all represent service. The following is a law of the commercial world in regard to profits. When a product is bought to be resold the selling price must be greater than the purchase price and enough greater to cover the additional cost of making the sale.

A dentist, from the commercial angle, has only one product to sell—that is service. If he wants to earn a reward above what it cost him to deliver that service he must sell it for more than its cost to him. Otherwise he is violating a fundamental law of the business world. That law acts as definitely as the law of definite proportions in chemistry. Walk into any successful business house to-day and one of the first proud boasts of the manager is what he knows about his costs of doing business. He displays his cost sheets and his cost system. He can tell you to a penny what it cost to produce or sell this item or that; he *knows*, and if he does not know he soon loses his job.

Another of the laws of the commercial world is that the cost of doing business must be known as an absolute essential to the successful conduct of that business. Even if the profits are excessive, *knowledge of cost* is more important than the surplus or excessive profit. One curse of a dentist's business activities to-day is the lack of knowledge of his costs.

The average professional man lives beyond his means very often because he deludes himself about his earning power. His gross is mistaken for his net, and his net is unknowable because his cost of doing business is not known. He cannot save because he has nothing beyond his expense account from which to draw.

Another law of the commercial world is to make every sale profit bearing; this is not always possible. However, if one sale is made at a loss another or many other sales must be made at a profit to break even. This involves useless activity and cost systems are developed to stop this very thing. Every service the dentist sells ought to be under the same law. Each sale being self-supporting.

The tissues of the mouth are subject to the same physiological and pathological laws as are the tissues of any other part of the body. The business activities of the dentist are subject to the same laws as are the business activities of the banker or merchant.

The business man to-day will tell you that the simple knowledge

of the gross receipts and gross expenditures are not sufficient knowledge on which to conduct a business safely, and that detail knowledge must be had. That the business must be analyzed and departmentized; that one department must not be a drag on another. That every business has needs peculiar to itself and those needs and demands must be met accordingly.

For example, the farmer quits work for the day, but his crops work while he sleeps, his land increases in value as the productivity of the soil develops; time with him becomes a matter of seasons and not days or hours; because of the enormous loss of a season's earning power, intensive power of the soil is studied, insurance against crop failure is purchased.

The railroad makes its earnings from the tonnage of a car or the speed of moving a given amount of freight a mile. The manufacturer earns according to the output of his machines plus the efficiency of his mechanics, plus the education of the public for his product. A salesman earns according to the number of hours out of the twenty-four he can efficiently offer his merchandize to the prospective buyer; the telephone company to the number of messages that can be transmitted in a given amount of time on a minimum of equipment. In all these conditions you will find the factor of time playing a very important part. With the dentist his earning power is based entirely upon his time. When the office closes his earnings stop. His earning power is intermittent even when in his office. This earning time has been called productive time. It is the time spent at the chair or bench doing a service for which a fee may be collected. The average man rarely exceeds 50 per cent. of his office time as productive time. This statement will not be believed by any one who has not kept a record.

The farmer dreams of intensive farming, the dentist dreams of making two crowns in the time of one and doing it as well. The railroad fights the expense account due to wrecks, short hours of employees, depreciation of equipment, luxury demanded by the public, all by increasing the freight rates. The dentist is trying to do business on the fees of twenty years ago with a more luxurious office, multiplied equipment, more expensive make overs, greater depreciation, and higher living expenses.

The successful salesman studies the psychology of his prospect and the laws of selling. The dentist should have a more salesmanlike method of presenting his services and a more businesslike method of getting them accepted and paid for. The telephone people have reduced their earning ability to a question of minutes and hours in the twenty-four, using expedients to cover slack hours and encouraging messages

away from the rush hours, thereby holding their equipment to an average of service. The dentist's earning ability is absolutely reduced to a specified number of hours per year. From 40 to 75 per cent. only of his time in his office is productive in cash returns, regardless of his patronage. If the sale of his services is so limited all the more should his activities be run according to definite business laws and not by a haphazard, unsystematic guess. The impossible is no more possible with the banker.

We see the laws of the commercial world, forceful, compelling, and immutable, governing the business activities of a professional practice as surely as do the laws of chemistry and physiology governing the activities of the living cell. A brick dropped from the top of a twenty story building falls according to the laws of gravitation, and he who gets hit by it gets hurt. Laws of the universe know no favorites; they are inflexible, immutable, and dependable, and violators get hurt when hit.

In that part of the dentist's work that has to do with the business laws let the laws of business have full control. Let sentiment die and haphazard methods cease and charity be dispensed in a more business-like manner.

I offer the following practical suggestions for adherence to the laws of the commercial world.

First. Quit guessing about the data of your office, and collect accurate figures on the same. No business house runs on his neighbor's figures.

Second. The methods of the successful business man have the respect of all classes of society from the lowest to the highest. The business methods of the professional man do not enjoy this prestige. Adopt methods of the successful business world.

Third. Things are accomplished in a professional way only when you have the money. A financially successful dentist should be a better professional man and usually is. Save systematically.

Fourth. It requires a little effort to collect information about your business, but it always pays a much bigger dividend than gold mines or rubber stock. Keep data about the office that will inform.

Fifth. Most every kind of commercial activity is getting good business help from others in the same lines. The professional man is either so jealous or ignorant that he steadfastly refuses to disgorge to his neighbor any data that is of any value. Compare with another.

Sixth. Because of a peculiar disposition to be in a hurry the dentist demands his supplies be handed to him in the most expensive and extravagant manner. Be more reasonable with the Supply House.

Seventh. Because he is a poor business risk he too often pays a usurious rate of profit for his supply service. Check up buying at the office as at home.

Eighth. One half hour every day spent at the desk will bring more organization and system into the business part of the office and consequently more money than three extra hours spent at the chair.

Ninth. Health is worth more than business. Eliminate nerves.

Tenth. A love of your calling is in a *direct* ratio to the net income of your office. Make the office pay and love will follow.

Eleventh. That every activity in the business world is granted the right of making a fair profit on a transaction, to say nothing of obtaining the original cost of the service sold. Add a profit above the cost.

The following suggestions have been found helpful: Spend thirty minutes a day at your desk for six weeks, analyzing *your* problem, keeping out every one except your office assistant; second, classify your operations in a group, ascertaining what each group has brought in cash, and the average on each operation. Ascertain what proportion of your producing time has been spent on each group of operations; fourth, compare the time spent on each group to the amount received from each group; fifth, analyze your gross yearly time spent in the hours on the production of cash to your gross yearly expense in maintaining the office and the necessary drawing account for the home needs; sixth, see that every hour spent at the chair brings a return equal at least to your average hourly expense.

For example, the average hourly expense, we will say, is \$5.00. The time spent at the chair is six hours. At least \$30 must be brought into the assets of the office every day to meet the expenses of the office. Greater or less hourly charges may be made.

Seventh, keep accurate account of time spent in cash production in order to learn how much waste time you have; eighth, realize that your earning ability is limited first by the number of hours possible to spend at the chair, second by the size of the fee obtained by rendering the service, that the cost to you should be the minimum to the patient; the maximum whatever you and the patient can agree upon; the courts will allow you only what is customary for that particular service; ninth, estimates in advance are businesslike, possible and help to avoid quarrels in the final settlement. Such estimates can only be given intelligently by a dentist who has collected data on his cost that is reliable. Tenth, estimates should give the number of hours required for the operation and the amount of expense to the patient, with a surplus added for safety to the dentist. Eleventh, other dentists should have access to

all figures (barring private information), that will help the entire profession to a more sensible fee basis than is at present in use. Twelfth, money drawn from the business for necessary family needs is a part of the expense of conducting the business, as the head of every business house draws an income from the business sufficient to live upon and such salary is charged to the overhead. The overhead expense includes the depreciation of equipment, depreciation of the operator, plus all the supplies and incidentals, together with a reasonable salary to yourself.

Thirteenth, the knowledge of faulty business methods must be backed with courageous action to change the precedents of the office otherwise ignorant bliss is all that is needed. This means that operations performed for less than they cost the dentist must bring in a higher fee or be banished from the list of services rendered. Fourteenth, collections, allowing credits, buying supplies, refurbishing the office, taking out money for your own salary, maintaining an equilibrium between the income and the expense, requires the cold, calculating mental state of a banker.

In conclusion, let me make it plain that I am not here to tell any one how to run his business. I do not offer myself as a horrible example or the opposite. After studying the business end of the dental office for a number of years, I see no reason why the laws of the commercial world should not be applied in a dental office exactly the same as in any commercial institution. If such laws are applied intelligently they will bring the same results that the intelligent applications of law will bring in any department of life. Render unto Caesar the things that are Caesar's and unto God the things that belong to God. I have nothing to sell. If any man is anxious to learn, any print shop nowadays can teach him a cost system. Any banker can teach him a safe system of giving credit; any merchant can teach him a good system for the collection of accounts; any successful business man can tell him about the overhead and the ratio between income and expense; any successful house on any street, in any town, can prove to him the demands of the public to-day in regard to location, and standard of upkeep. The demands of the public are different than they were twenty years ago. Any contractor or architect can teach him how to make or estimate before he renders the service and how to make a contract for doing the same. The business side of dentistry demands attention to the laws of the business world. Not the adoption of a lot of insincere "bunk" that disgusts sensible people and brings disrepute to the profession as a whole.—*The Dental Review*.

THRIFT AS A WAR WEAPON

PUBLISHED AT THE REQUEST OF THE LIBERTY LOAN COMMITTEE

(Exclusive to the DENTAL DIGEST)

The Administration at Washington has asked the publishers of the nation to emphasize the truth that this war cannot be won without thrift. It does not require any expert knowledge of Treasury affairs or of Congressional appropriations to see that every man, woman, and child in the country must adopt the creed of self-denial and economy if the tremendous war bills now being presented or about to be incurred next year are to be met.

The amount of money asked for in the first two Liberty Loans, and to be applied for by the Government in the next loan, as well as the sums to be raised by war taxation, furnish an index, albeit a rough one, of the requirements of the Government at this time. Let us consider these items. In the first Liberty Loan campaign, \$2,000,000,000 was accepted by the Government, after \$3,035,226,850 had been offered. In the Second Liberty Loan, \$3,808,766,150 was accepted, after \$4,617,532,300 had been subscribed. The Third Liberty Loan is expected to be as large as the first two combined. Two billions or more will be raised by Federal income and excess profits taxes by the middle of next year. With these figures in mind, then, it is not hard to see why the gospel of thrift must be accepted by the people of the United States at once. The success of the first two loans shows that great progress has been made by the nation in this respect, but that much more remains to be done. Secretary McAdoo has stated that the people are still drawing generously upon the general store of supplies in the country.

To every loyal citizen of the United States, the needs of the Army and the Navy are paramount. Whatever of sacrifice is to be made, whatever of economy is to be put into force, will be done gladly by the people in behalf of the fighting men. Now as to the requirements of the Army, which will give some idea of the extent to which the nation must economize.

Estimates recently submitted to Congress by the War Department show that for the second year of the war, ending in July, 1919, at least ten billion dollars are needed.

The War Department's budget is likely to be by far the largest of any, but remember that it is only one item in the list of war expenditures. A nation accustomed to figure its National expenditures in millions before the war, must think in terms of billions.

Even the gigantic resources of the United States would not be equal to the demand made by the war were it not for the ability of the nation to re-adjust itself to the stern conditions, and apply its savings to the payment of the bills. The tremendous financial programme of the United States, involving as it does at the present time the lending of half a billion dollars every month to the Allies, in addition to its own expenses in maintaining a great army and navy of defense, is based upon the belief of the Administration that the people will devote all that they have and are to the conflict.

THE WAR TIME SIZE

Increasing costs of all forms of materials and labor involved in magazine making, necessitate increased subscription rates (which many magazines have been forced to effect) or economies in manufacture.

We prefer to effect economies in manufacture and have reduced the trim size of the magazine from $6\frac{1}{2} \times 9\frac{1}{2}$ inches to 6×9 . This has been done by merely reducing the width of the margins.

No reduction in quality of service is contemplated.

May we have your approval of this step?

THE PUBLISHERS.

EDITOR FOR THE FORSYTH DENTAL INFIRMARY

TO THE EDITOR:

You will be interested to know that Dr. Walter A. Bradford has received an appointment as Editor of the Forsyth Dental Infirmary for Children.

There is a vast amount of interesting clinical material which would be lost unless collected by such an official, and as this will, hereafter, be carefully edited and presented to the various journals for their attention and publication, I am taking this means of informing you of Dr. Bradford's appointment.

Though this material has been gathered in the past, through lack of a proper and efficient head to care for its presenting to Dental Journals, it has, unfortunately, never been published.

Very truly yours,

HAROLD DE W. CROSS,
Director.

PRACTICAL HINTS

[This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions, and Answers should be sent direct to him.]

TO CLEAN HAND PIECES.—Fill a common pint milk bottle near full with gasoline, place hand piece on your engine and run engine for quite a while, holding the hand piece immersed in the gasoline; you can see the rust and old gummy oil coming out of hand piece; after you are satisfied the hand piece is clean, take hand piece in one hand and towel in the other, give hand piece a few knocks on towel, which removes the remaining gasoline, let it set for a few minutes and then oil well.—C. I. FAISON, Dallas, Texas.

TO PREVENT MODELLING COMPOUND FROM STICKING TO FINGERS.—So many of us use modelling compound for minor operations, heated over a dry heat, but we find that it sticks to our fingers and hands and sometimes causes a blister.

To prevent this: if the hands are subject to being dry, moisten them a little, then dry, if not, just sprinkle a few sprays of talcum powder over the palm of each hand, rub it in good, then go ahead and shape the compound into any shape you wish without any fear of it sticking to your fingers or hands. If you are preparing the compound to use in the mouth, the odor of it is off-set by the sweet perfume of the powder. Moistening the hands only helps to keep the powder on them longer. The small amount of the powder that is rubbed into the compound does not affect it in any way.—J. V. CHANDLER, Kingsville, Tex.

HOW TO REPAIR BROKEN PIN.—When a case presents itself with a pin of Logan or Twentieth Century Crown broken off in canal, very often you have about one-fourth of pin that remains with body of porcelain tooth. Remove the portion of pin that is in canal; serrate pin that remains in body of porcelain tooth, place inlay wax on pin, fit it in canal until it takes place of old pin, remove and invest and cast with acolite, and you

have a better fitting crown than at first and a very strong one.—C. I. FAISON.

[Good point—If one feels a doubt however, as I do, as to the strength of acolite or of its attachment to old pin, extension can be cast in gold, 20K or clasp and same soldered to old pin.—V. C. S.]

TO RENEW SLICK STONES.—Very often the laboratory or office carborundum stone becomes slick and gummy. To remove this condition, place stone in hydrochloric acid (HC₁); let it set for a day, then wash good with soda water and you have a nice clean carborundum stone.—C. I. FAISON.

[Austin's Wheel Dresser is quick, easy and effective for cleaning laboratory stones. It cuts the surface of the stone down a bit leaving a fresh, sharp clean surface.—V. C. S.]

QUESTIONS AND ANSWERS

Question. I have a case like the following: Man 62 years old, very poor, a shoe cobbler, good health, fine gums, only one tooth missing, balance all worn down, heavy rooted teeth. The proper dental procedure would be to devitalize some of them and fill roots, and inlay or crown them all heavily. But this man can't pay anything "What should I do to relieve his pain?" I am a philanthropist all right, but not able to make this sized donation.

What is right in this case?—J. O. C., Fort Worth, Tex.

ANSWER. Paint the sensitive abraded surfaces with silver nitrate and burnish it in with a hot burnisher or electro-cautery. If any of the pulps have died and are putrescent or abscessed you should treat and fill or extract. If after treating sensitiveness with silver nitrate the abrasion still seems a menace to the man's health and happiness, the occlusion may be restored inexpensively by taking careful impressions over teeth and gums and vulcanizing plate or splint to fit over teeth, either one or both jaws as seems advisable, restoring occlusion. If space permits, put porcelain teeth on the splints if not, carve up in wax and pack and vulcanize the whole thing with rubber—exposed anterior portion with white rubber. Let him keep these in only when masticating (either tobacco or food) and insist that he must keep splints, teeth and gums thoroughly cleansed.—V. C. S.

Question. Please give a method for removing Steele's facings from old bridges.—S. E. M.

ANSWER. Invest bridge, bring to red heat, and when cool, tap facings gently a few times with mallet. Or soak for several hours in muriatic acid.—V. C. S.

Question. I have a patient age 52 years and I have tried to take an impression for upper plate, each time patient becomes nauseated so that it is impossible to take an impression. Patient becomes nauseated even when empty tray is placed in mouth. Have tried taking impression with plaster as well as modeling compound.—H. E. D.

ANSWER. Spray the throat thoroughly with cocaine solution. Be sure of a firm, even pressure across entire posterior border of impression. As you insert same, ask patient to breathe forcibly out through the mouth. Show him how, forcing each breath out audibly. If he still gags push his head over the cuspidor and hang on to your impression until it hardens—he will not any more than lose his breakfast. In making plate be sure to get a firm contact across entire posterior border, the tickling sensation of a light or occasional contact is the greatest cause of gagging. Often a patient will insist that he cannot wear a plate when you first put it in but if he can be persuaded to wear it for a few days, gagging sensation passes off.—V. C. S.

Question. Am treating upper second bicuspid of male patient aged 35 years. Have devitalized same by pressure anesthesia several months ago; since then have removed canal points and refilled. A few days ago removed filling and canal contents again. It was void of any trace of bad odor or pus. Patient complained of extreme soreness when biting on sweet substance. The only thing left to my mind is a "probable" puncture of root. Would X-ray reveal same? Would appreciate highly any diagnosis for above case.—A. A. H.

ANSWER. I think you had better look to some other tooth either upper or lower, for your sensitiveness to sweet; a pit cavity or an approximal cavity, an abraded occlusal surface or an exposed root from receded gum. A puncture of the root might cause tooth to be sensitive to pressure but scarcely to sweet. An X-ray would show puncture either mesially or distally; but probably not buccally or lingually. It is best to seal in a small metal diagnostic wire, while taking picture.—V. C. S.



THE BEST OF CURRENT THOUGHT

[*The Dental Review*, December, 1917]

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The Diagnosis and Treatment of Destructive Diseases of the Dental Pulp; and a Method of
Removing the Dead Tissue from the Canals. By J. P. Buckley.

Duties of the Assistant. By E. S. Barber.

*The War and its Effect on Dentistry. By L. L. Davis.

Illinois State Dental Society, Fifty-third Annual Meeting, Held at Quincy, Ill., May 8-11, 1917.

Chicago Dental Society.

Wisconsin State Dental Society, Forty-seventh Annual Meeting, Held at Janesville, July
10-12, 1917.

The Odontological Society of Chicago.

The Duty of the Present-Day Dental Student.—Editorial.

Still at It.

THE WAR AND ITS EFFECT ON DENTISTRY

BY L. L. DAVIS, D.D.S., CHICAGO, ILL.

The dental profession of America is confronted just now by one of the greatest problems it has ever met, and only by careful study and prompt, effective measures will the proper solution be made. At no time in the history of the profession has its value in human economics been placed so high, and the recognition and demand for dental service so great, and this knowledge is spreading so that the dentists of the present age must practice along more scientific lines than ever before.

The wave of enlightenment regarding some of our former procedures has caused a material change in our methods of practice. We no longer destroy vital pulps to place abutments for bridges, no longer place the patient's teeth, and maybe life, in jeopardy to supply a substitute for a missing tooth. We take greater precaution in securing asepsis during the treatment and insertion of root fillings. We use our best efforts to secure proper adaptation and occlusion of all our measures for the repair of the ravages of caries. In fact to-day, even the ordinary dentist is taking precautions and practising dentistry in a more enlightened man-

ner. The best of the profession are striving for greater efforts. Post-graduate schools are better attended; special courses in special studies are marked by the number of those interested, and there seems to be a general awakening throughout the entire profession regarding the responsibilities of the dentist.

This is only what it should be, if advancement is to be made, but it is not all that can be accomplished if we will only recognize the exigencies of the present, the future demands, and take steps to be ready for them.

There are about 40,000 dentists in the United States. Of these death and old age will demand its toll in the next four years, and those of active middle life will take their place as workers for the good of the profession; but what of the new blood?

Now comes war to take from the profession the younger element, to make of them dentists capable only of the most simple reparative measures, and this brought about by the hasty needs and temporary relief incident to war conditions, or may be to mould it into greater thoughts of service and duty, to give such opportunity as was never before offered to those wise enough and willing enough to grasp it. Opportunity to do what? To place dentistry where it belongs as one of the prime and basal elements of the health and welfare of the entire human race. One million—maybe five millions of men—from all walks of life will have to pass under the care and supervision of dentists for a period of time, and this will result in a wider appreciation of dental service. And what of the dentists? Are they fully prepared for all the emergencies that may confront them? Do they realize the responsibility of the occasion? How many are preparing themselves for the results of war that will soon confront them? Not the dentistry we have been practising, but the dentistry we must practise in the future. Now is the time for every dentist to take out of the bookcase his old textbooks and begin a systematic review of the subjects taught him as a student, his Gray's Anatomy, his textbooks on physiology, pathology, chemistry, histology and bacteriology, and afterwards some of the later works along these lines.

To be a "Doctor of Dental Surgery," as his diploma indicates, and not a mere mechanical dentist. To prepare himself to do such service for his country and humanity as will command recognition the world over. This is the time to show the world that dentistry is a learned profession and its practitioners men of sound judgment and broad culture.

The profession responded nobly to the recent call for free dental service to the drafted men, but in a short time greater demands will have to be met and responded to as cheerfully. If all the sanguine expectations of those who look for peace before America can put her troops

in the field are fulfilled, our preparedness will not have been in vain. Only good, and great good, to the dental profession, can come from a proper conception of the possibilities of the present time.

Study, is the answer to the problem. Study for the young and old, not neglecting the things of the present, but preparing for the questions of the future.

Steps should be taken *now* to organize and establish a Dental Hospital in this and other large cities. This society has fostered and carried into effect many good things for the dental profession, and *now* is the time to strike for one of the greatest benefits to humanity and the profession.

Dental hospitals, for the care of surgical cases, for the study of conditions only rarely occurring in the average practice and yet demanding a thorough knowledge on the part of the dentist, dental hospitals for the care of the mouths of children of parents whose financial status or mentality prevents the future citizen from having dental service at the proper time. In several of our cities such institutions have already been established by members of the laity whose benevolence and foresightedness commend them to all humanity.

But Chicago has not yet heard from her millionaires. The dentist only can enlighten, and pave the way for such institutions, so here is more opportunity for the wise and thinking men of the profession. When giving becomes an everyday occurrence, in spite of many demands, there is always the desire "to do" for all worthy cases; so in this time of charitable habit forming is the crucial period for accomplishing the desired end.

With this war as a stimulus to bring forth the best in all, our lives should be guided into more serious channels of thought, and our efforts in the direction of plans for the betterment of the race so doing "our bit" that the world may be the better for our having lived, and our beloved profession receiving its just recognition among the learned professions.

[*The Dental Register*, November, 1917]

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Treatment of Pulpless Teeth.

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[*Dominion Dental Journal*, November, 1917]

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Outline of Lecture on Gunshot Fractures of the Jaws and Their Treatment. By John S. Marshall, M.D., Sc.D., F.A.C.S.
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Treatment of Lack of Development of the Mandible. By George F. Burke, D.D.S.
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The Country Dentist and the Treatment of Pyorrhea. By M. G. Skinner, D.D.S.
Oral Surgery Clinic. By C. H. Oakman, D.D.S., M.D., F.A.C.S.
The Porcelain Molar Crown Using a Gold Base as Attachment to Root. By Harold E. Rice, D.D.S.
The Application of Photography to Dentistry. By Samuel L. Lewis, D.D.S.

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[*The Dental Summary*. December, 1917]

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 President's Address. By D. M. Cattell.
 The Internist and his Relation to the Dentist. By Charles P. Emerson.
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 Oral Surgery Case Reports.
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Annual Report of the Chief Medical Officer of the Board of Education. A Review. By
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[*Oral Health*, November, 1917]

Trench Mouth. By L. D. McLaurin, Captain C.A.D.C., Bramshott, Hants, England.
Dental Service for Employees of a Great Industry. By E. A. Harrington, D.D.S., Toronto.
The Preparedness League of American Dentists—Our Second Annual Meeting. By J. Wright Beach, D.D.S., Buffalo.
The Need for Dental Inspection in Rural Schools. By Richard G. McLaughlin, D.D.S.
The Composition of Saliva in Relation to the Incident of Dental Caries. By John Albert Marshall, University of California.
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What Kinds of Bridgework to Apply. By Marcus L. Ward, D.D.Sc.

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Proceedings of the House of Delegates

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**THE FIRST SEMI-ANNUAL REPORT OF THE WAR COUNCIL OF
THE AMERICAN RED CROSS (ABSTRACTS)**

AIMS OF THE RED CROSS

Broadly speaking, the Red Cross War Council has proceeded upon the theory that the present work of the American Red Cross should contribute to these great aims:

1. *To be ready to care for our soldiers and sailors on duty wherever and whenever that care may be needed.*
2. *To shorten the War—by strengthening the morale of the allied peoples and their armies, by alleviating their sufferings in the period which must elapse until the American army can become fully effective abroad.*

3. *To lay foundations for an enduring peace—by extending a message of practical relief and sympathy to the civilian population among our Allies, carrying to them the expression of the finest side of the American character.*

The American people have generously supported the work of the Red Cross, and this report of activity is given with great fullness in the hope that through it the public may realize both the obligation and the opportunity which the future presents.

RESPONDING TO THE CRY FOR RELIEF

The American Red Cross is attempting to respond to the most beeching and far-reaching appeal ever made for mercy and relief.

The American people are to-day the richest people in the world, the richest in resources, richest in obligations and in opportunities. The Red Cross aims to mobilize the hearts and souls of America toward binding up the wounds of a bleeding world.

Up to date approximately \$88,000,000 in cash has been collected for the War Fund. The demands, however, in Europe, are increasing with great rapidity and on the present basis of expenditure the \$100,000,000 War Fund cannot last much beyond Spring.

MONEYS APPROPRIATED

Following the preliminary report recently made on the work in Europe of the American Red Cross, the War Council presents herewith a summary of the work of the Red Cross, both in the United States and in Europe, from May 10, 1917, to November 1, 1917.

During this period the War Council appropriated from the War Fund (including \$7,659,000 advanced to chapters for purchase of material and to be returned to the War Fund), \$10,969,216.60 for work in the United States, as contrasted with the appropriation of \$27,885,816.86 for work abroad, of which \$20,601,240.47 was for use in France.

There have been appropriated from funds restricted to specific purposes \$1,417,625.74. As \$7,659,000 advanced by the War Council is to be returned to the War Fund the net appropriations amount to \$32,613,659.20.

The total expenses of raising and collecting the War Fund are proving to be less than one per cent. The War Fund is deposited locally by the chapters and campaign committees. About 3,500 banks now hold these deposits, in the name of William G. McAdoo. Treasurer.

BASE HOSPITAL UNITS EQUIPPED

Forty-nine Army base hospital units and five for the Navy have been recruited, organized and equipped by the Red Cross. More than twelve

of the Army units and two of the Navy units have now been mustered into their respective Medical Corps and are seeing service. These units can care for a 500-bed hospital each, and some of them have been reinforced to enable them to take over larger hospitals.

The Red Cross has also organized 45 ambulance companies, with a total personnel of 5,580, all of which have been taken into the Army Medical Corps, some for service abroad, others for the camps and cantonments. A General Hospital, for the use of the Navy, has been established at Philadelphia. Convalescent homes have been built at Fort Oglethorpe and Fort McPherson, Georgia, and mobile laboratory cars are to be provided for use in case of emergencies at the camps.

THE RED CROSS SANITARY SERVICE

Through its Sanitary Service, the Red Cross is coöperating with local health authorities in maintaining the best possible sanitary conditions in the zone just outside military jurisdiction at the training camps and cantonments. Twenty sanitary units have been organized for this purpose.

The Red Cross has placed field directors of Camp Service at thirty-eight camps, cantonments and naval stations. The purpose of the Camp Service is to coöperate with all the agencies that are advancing the welfare of the enlisted men.

The Red Cross has continued its work of disaster relief during the war, and has rendered aid in 64 calamities. Recently a call for help for flood victims in Tien-tsin was answered by the dispatch of a relief expert to the city and the sending of \$125,000.

RED CROSS NURSES

Fourteen thousand Red Cross nurses have been enrolled for duty, and approximately 3,000 have already been called into active nursing service, of whom 2,000 are working abroad.

A programme for increasing the reserve of fully trained nurses for war service has been adopted, in concert with the Committee on Nursing of the Council of National Defense and other nursing authorities.

WHAT THE WOMEN ARE DOING

Millions of women have been mobilized for work on surgical dressings, hospital garments, refugee clothing, knitting garments, and comfort kits. It is estimated that the value of their work during the next twelve months will amount to nearly \$40,000,000.

Since April 1, 1917, the Red Cross has sent abroad 13,336 cases of

surgical dressings, hospital supplies and clothing, containing approximately 13,000,000 separate articles. The Red Cross has promised to send 3,000,000 surgical dressings to France every month for the next six months.

HOME CARE OF THE SICK

Courses of instruction in elementary hygiene and home care of the sick, home dietetics, and first aid have been given throughout the United States. More than 34,000 women have completed the first of these courses, and 75,000 certificates of proficiency in first aid have been issued during the past year alone.

RED CROSS AIMS ABROAD

The principal purposes of the work of the American Red Cross abroad may be summarized thus:

1. To do everything possible to assist our army and navy in insuring the health and comfort of American soldiers and sailors abroad, and
2. To relieve suffering among the armies and destitution among the civilian populations among our allies.

The establishment and maintenance in France of canteens, rest houses, recreation huts, and other means of supplying comforts in the armies of our allies have been the means of heartening them and keeping their men in the field until our men could become fully effective.

The details which follow here are supplemental to those given in the report issued in September.

APPROPRIATIONS OUTSIDE OF FRANCE

The total appropriations (cents omitted), for the work outside of France up to November 1 are as follows:

For Belgium.....	\$ 720,001
For England.....	1,066,520
*For Italy.....	214,000
For Russia.....	1,359,440
For Roumania.....	1,518,398
For Serbia.....	493,203
For Armenians and Syrians.....	1,800,000
Other appropriations.....	113,012
 Total.....	\$ 7,284,574

*Later the War Council appropriated \$750,000 for emergency relief in Italy.

A METHOD OF STERILIZING, AND AT THE SAME TIME IMPREGNATING WITH A METAL, AFFECTED DENTINAL TISSUE*

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We have found the treatment about to be described effective and of broad application, as follows:

I. It is effective in the sterilization of the disintegrated dentin overlying pulps, as in the large cavities of carious first molars.

II. By this method it is possible to completely sterilize not only a putrescent pulp without removing it, but also the dentinal structure of the root as well.

III. In acute pericementitis following the death of the pulp it is only necessary to pump this material into the pulp chamber and into the canals as well as possible and close the tooth. The pericementitis in such cases as we have treated has been quickly allayed, and a subsequent and more thorough application has apparently ended the trouble.

IV. We have found it effective in the treatment of chronic abscesses; indeed this treatment was developed largely for these special cases. The loss of the first or second molar means so much to a child that we attempted to find a simple, rapid, and effective method of treating these teeth in a large clinic.

V. We believe this to be a most admirable means of taking care of apical foramina in all cases if properly used. It is also applicable in cases where a slight apical sensitiveness exists, due to a small piece of pulp tissue left after removal of that organ during infiltrative or conductive anesthesia.

VI. It is an excellent means for almost painlessly disposing of the remaining part of a pulp after the death or removal of a portion of it. For example, it frequently happens that one root in a molar retains some degree of vitality, while the rest of the pulp is dead. This method effectually disposes of the remaining nerve shred.

VII. Applied to the root-end after apicoectomy it lessens the probability of subsequent trouble.

In all these cases this method does more than sterilize the tissue. It fills it at the same time. It permeates any affected dentin, and fills it with metallic silver in a wonderfully perfect manner.

*The substance of this paper was presented in the form of a lecture before the Pennsylvania State Dental Society, Philadelphia, June 26, 1917.

PREPARATION OF THE MATERIAL AND METHOD OF USING IT

Two solutions are required:

Solution 1. This consists of a saturated solution of silver nitrate in water to which is added little by little strong ammonia. As the ammonia is added a dark precipitate of silver oxid is thrown down. This is soluble in excess of ammonia, therefore continue adding the ammonia until the solution becomes clear.

Solution 2. This consists of a twenty-five per cent. solution of formalin in water.

These two solutions must be kept in separate dark-colored glass bottles, with glass stoppers, and should be away from the light as much as possible. They work better if they are freshly prepared, but are still good after a considerable time if kept as recommended.

The principle is that of silver reduction. Metallic silver is thrown down in a very finely divided state. It is deposited upon the sides of a clean test tube as a mirror. The principle is used in photography and in staining methods in histology. The action in the tooth is the same. A finely divided deposit of silver in its metallic form occurs wherever the liquid penetrates. By successive applications a very appreciable thickness of deposit occurs. This may be burnished and made to take on the luster of the metal.

The reaction in this method is as follows:



Formic acid acts readily as a reducing agent, taking away O, and forming carbonic acid H_2CO_3 , which decomposes easily into CO_2 and H_2O . We have then practically metallic silver and nothing else. The reaction sterilizes, as we have ascertained by repeated examinations, and at the same time leaves this heavy deposit of metallic silver in a fine state of subdivision, which penetrates all affected dentin but does not penetrate the sound tissue of the teeth.

The method of procedure is very simple. Such slight changes as are needed to make it adaptable to different localities in the mouth can readily be solved by the ingenuity of the operator. We shall describe some of these in our discussion of specific cases.

It is better to apply the rubber dam or to protect the tissues in some way. Any applicator will answer the purpose for conveying the liquids to the cavity. Broaches wrapped with cotton will serve the purpose. In the clinic here we use two pieces of glass tubing; these we prepare by heating a piece of small-bore glass tubing in the middle, and by drawing it out

to a capillary. With a file this is then broken in the centre. One tube we keep for the ammoniacal silver solution and the other for the formalin. If the solutions are of sufficient depth in the stock bottles, the liquid will collect in the capillary end of the tubes, or it can be drawn up into the tubes by suction. The fluid can be retained and controlled by placing the finger over the large end of the tube. Tubes with curved ends are used for the upper teeth.

A tube of solution 1 is taken, the capillary portion filled, the finger placed over the end, and this is conveyed to the cavity. By momentarily raising the finger a small drop of the silver solution is allowed to flow into the tooth. A small drop of solution 2 is now flowed in, the solution darkens, silver is reduced and is deposited upon the surface. After a few moments absorb this solution and repeat the process, in order that more silver may be reduced and deposited.

It is well to protect the hands with rubber gloves or to wear finger-cots. Throughout the treatment the silver that is deposited in the dentin is black. It is no longer silver nitrate; it is no longer formaldehyd; it is simply metallic silver that is deposited, with the formation of weak formic acid, which latter is readily converted into CO_2 and water. Sound dentinal tissue does not discolor, but any defective tissue appears jet black. Any tooth, even an anterior one, can be protected from the discolored effects of these solutions by a coating of adhesive wax. By neatly cutting away the wax the treatment can then be applied at the point where it is indicated.

So much for general rules in the use of this treatment. More specific details will be given in the discussion of the various headings that I have given.

METHOD OF CONDUCTING BACTERIAL EXAMINATIONS

In all cases we use the following media: Agar, glucose-agar, blood serum, and bouillon; the cultures are made aerobically and anaerobically.

In the case of dentin small bits are smeared over the solid media, and dropped into the liquid media.

In root-canals the dentinal structure is removed by a sterile bur, and the shavings dropped upon or into the media. We begin with a No. 3 bur, then use a No. 4, and so on up to No. 6. After we use a No. 6 bur the sides of the canals are lightly burred with a lower number, as No. 1. Of course in some cases the use of so large a bur as No. 6 is precluded, but the same principle is observed.

The bacterial examination of root-canal contents is made by scraping out the material with a sterile broach, excising the broach with sterile cutting-pliers, and dropping it upon the media. Sterile cotton points are introduced into the canals and then cultured.

STERILIZING DISINTEGRATED DENTIN

(T) *It is effective in sterilizing disintegrated dentin overlying pulps.* In the course of our studies upon the bacteriology of dental caries at this institution we have found that cavities as they are ordinarily prepared for filling are not sterile. If cuts are made into the deep dentinal structure, and the material cultured, a good growth of the Moro-Tissier micro-organisms, which we have elsewhere shown to be the constant flora of caries,* is obtained. In the account of our work we have shown that this type of bacteria, and this alone, remains alive under fillings for at least six months. They are not only alive, but grow vigorously when cultivated upon laboratory media. With the dentinal tissue, then, containing bacteria, and with the bacteria capable of living under fillings, according to modern surgical principles this tissue should be sterilized even in simple cavities, while in deep cavities it is more imperative.

The study of carious tooth sections shows that the carious process penetrates much deeper than is ordinarily supposed. Particularly is this so in the molars of children. It is not practical to sterilize by means of the bur cavities that approach closely to the pulp. Is it not infinitely better not to disturb decalcified dentin, with its perfect and individual adaptation to the pulp, than it is to remove it and to attempt its substitution by a foreign material? Such a substitution can at best be only a crude and rough affair. Is not the sterilization of this tissue and its simultaneous impregnation with a metal an infinitely more therapeutic measure?

DESIRABILITY OF SAVING THE PULP WHERE POSSIBLE

One cannot examine carious tooth sections for long without being convinced that the pulp comes early into contact with the bacteria of caries. Cavities in the molars particularly penetrate quickly to the pulp; *to* but not *into* it. The pulp has the ability to protect itself against bacteria as does other tissue, but the pulp has the further ability of recalcifying dentinal tissue. This has been practically shown, but is not yet fully understood, so that unless bacterial contact becomes an invasion, or the vitality of the pulp has become impaired, it seems reasonable to believe that the treatment we are presenting for your trial and study can act only beneficially.

Is it not better in the most extensive decay of molars to apply this treatment and to give the pulp a restorative chance than it is to immedi-

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ately destroy it? I shall show farther on that the pulp is an important organ until late in life, and every effort should be made to preserve it. This is particularly so in the case of the growing child.

In the case of infection of the pulp, as in the case of many oral infections, the actual bacterial invasion must be preceded by chemical or mechanical trauma, by circulatory disturbance, by the irritations due to thermal changes, or to the conductivity of metallic fillings, by disease, by nervous disturbances, and other similar agencies. The pulp has its full share of resistance, and will respond to therapeutic measures. Wash out the cavity with Dakin's solution, then treat by the method that I am giving here, and I think that the pulp will have a fighting chance, and recover its normality if it has not been too severely injured.



Fig. 1



Fig. 2

These teeth were treated in the mouth and then extracted. The sides were ground off and the penetration of the silver is shown. The healthy tissue is not penetrated, but the unsound structure is.

If the agitation over the blind abscess amounts to nothing more, it at least demonstrates to us that to save teeth we must begin at the beginning and conserve dentinal tissue. It is possible to destroy a tooth mechanically as well as pathologically. It requires some skill to cut out or off any part of the anatomy. But surgery should be the last resort; it should follow only after all restorative attempts have failed. We should rely more upon therapy and less upon mechanics in all dental treatment. Cavities are rarely sterilized by the bur, as we have ascertained by careful clinical and laboratory examination, and our sections show why. It is on account of the depth of the bacterial penetration. This is particularly the case in posterior teeth. Is it not better, then, to remove as little as possible of dentin consistent with the stability of our mechanical substitutes, and sterilize this disintegrated tissue and simultaneously impregnate it with a metal like silver?

IMPORTANCE OF PRESERVING THE FIRST MOLARS

The removal of the four first molars from the children in a clinic of the size of this is a matter that deserves more than passing attention. A good inch taken from each arch and to the depth of half an inch in the grinding region of a child's mouth, directly under and affecting the maxillary sinuses during a growing and formative period, is a serious matter. It is serious directly to the individual, indirectly to posterity. Every dentist recommends coarse foods and mastication for tooth and jaw development and protection; so does the physician for a more extended bodily effect. Shall we reduce the masticatory surface by one-third, and at the beginning of life? We are continually dealing with cramped arches and nasal constrictions. Shall we at one operation reduce the size of the arch in a large measure?



Fig. 3



Fig. 4



Fig. 5

These are laboratory teeth. The tooth in Fig. 3 had five foramina; that in Fig. 4 had two foramina. All foramina are filled. Note the healthy structure in the root of the tooth in Fig. 5, just above the gum margin.

Recall the animal experiments that demonstrate the effect of the use or lack of use of the molars upon the dental arch and the adjacent structures. The deciduous teeth upon one side of the animal's head were removed or treated so that they were not usable, while upon the other side they were not disturbed. After a few weeks the skulls of these dogs showed a striking cessation of development upon the unused side, not only of the teeth, but of the nasal passages and of the sinuses, while upon the other side a full and natural growth took place. Nasal constriction, then, follows removal of these teeth in children, and we know that full nasal breathing is of importance in general health. Statistics show that

by far the most frequent tooth to decay is the first molar. For these reasons a more than ordinary attempt should be made to save these teeth, and I feel that the treatment which we have under consideration has possibilities in this direction that are superior to a mere mechanical procedure, whether the caries comes to us at its commencement or in a more advanced state. The clinical results are certainly very encouraging.

STERILIZING PUTRESCENT PULPS

(II). *It is possible to completely sterilize a putrescent pulp without removing it.* We do not recommend this procedure, but by it it is entirely possible to leave a silver deposit in the tissue of the pulp, perhaps in the form of silver albuminate. At any rate, the pulp is sterile if the procedure is properly carried out, as we have demonstrated by repeated tests.

This is a safety measure, for it not infrequently happens in root-canal work that, although the instruments are sterile, the septic pulp tissue is pricked through the apices, or that the broach goes through after passing through septic root matter, thus inoculating the tissues beyond.

If upon opening a tooth that is pulpless the first procedure is to apply this method, and the canal may be cleaned in safety. Indeed, it is surgically clean and more. The dentinal tissue of the root itself, of equal importance in the preservation and retention of the tooth, is not only rendered sterile, but is impregnated with metallic silver. If this treatment is thoroughly applied no further treatment is necessary, and the tooth may be immediately filled.

TREATING ACUTE PERICEMENTITIS FOLLOWING DEATH OF THE PULP

(III). *When the death of the pulp is followed by acute pericementitis, it is only necessary to apply the treatment and close the tooth, when the inflammation will be promptly allayed.* It is better to see such a case a second time, for in any inflammation serous exudates occur, and they might find their way into the canal. These should be absorbed with sterile cotton points in the usual way, and the sterilization done a second time, depositing a good body of the silver in order to close the foramina. In such cases as we have had under observation this treatment has apparently ended the trouble. We have found that canals which have been treated by other methods, when treated by the method we are describing are dry, and that the small canals have been closed with the silver.

(To be continued)

FUTURE EVENTS

January 8, 1918.—North Dakota Board of Dental Examiners, Fargo, No. Dakota.—W. E. HOCKING, Devil's Lake, *Secretary*.

January 10-12, 1918.—The next meeting of the North Carolina State Board of Dental Examiners will be held at Raleigh, No. Car.—F. L. HUNT, Asheville, No. Car., *Secretary*.

January 14-18, 1918.—The Montana State Board of Dental Examiners will meet in Helena, Montana, for the purpose of conducting examinations.—G. A. CHEVIGNY, 107 Clark Blk., Butte, Mont., *Secretary*.

January 14-17, 1918.—The Idaho State Board of Dental Examiners will hold the next session at Boise, Idaho.—A. M. JACOBSEN, 255 East Centre St., Pocatello, Idaho, *Secretary*.

January 26, 1918.—Annual Clinic of the Chicago Dental Society, La Salle Hotel, Chicago.—T. A. BROADBENT, *Secretary*.

February 7-9, 1918.—Minnesota State Dental Association, University of Minnesota, Minneapolis, Minn.—MAX E. ERNST, 1125 Lowry Bldg., St. Paul, *Secretary*.

February 23, 1918.—Dedication of the new dental building of the College of Dentistry, State University of Iowa, and College of Dentistry Clinic, Iowa City, Iowa.—R. R. DEKRUIF, Des Moines, Iowa, *Secretary*.

March 12, 1918.—The Fox River Valley Dental Society. Fifteenth annual meeting at Oshkosh, Wisc.—R. J. CHADY, Oshkosh, Wisc., *Secretary*.

April 11-12, 1918.—The Thirty-eighth Annual Convention of the Texas State Dental Society, San Antonio, Texas.—J. G. FIFE, 736 Wilsq Bldg., Dallas, Texas, *Secretary*.

April 10-12, 1918.—West Virginia State Dental Society, Huntington, West Va.

April 11-13, 1918.—Michigan State Dental Society, Detroit, Mich.

April 15-17, 1918.—Kansas State Dental Society, Topeka, Kansas.

April 18-20, 1918.—Connecticut State Dental Association, Hotel Taft, New Haven, Conn.—GEO. S. B. LEONARD, *Secretary*.

April 25-27, 1918.—The Virginia State Dental Association, Roanoke, Va.—F. R. TALLEY, *Corresponding Secretary*.

May 14-16, 1918.—Nebraska State Dental Society, Lincoln, Nebraska.

May 21-23, 1918.—Indiana State Dental Society, Claypool Hotel, Indianapolis, Ind.

June 12-13, 1918.—Georgia State Dental Society, Atlanta, Ga.

June 13-15, 1918.—Kentucky State Dental Society, Lexington, Ky.

June 19-21, 1918.—North Carolina Dental Society, Oceanic Hotel, Wilmington, N. C.—W. T. MARTIN, *Secretary*.

July, 1918.—New Jersey State Dental Society, Atlantic City, N. J.

July, 1918.—Wisconsin State Dental Society, Milwaukee.